

**Ministry of Water Resources and Irrigation
US Agency for International Development
Agricultural Policy Reform Program
Environmental Policy and Institutional Strengthening Indefinite Quantity Contract**

**APRP – Water Policy Activity
Contract PCE-I-00-96-00002-00
Task Order 807**



***MATCHING IRRIGATION SUPPLIES AND DEMANDS
PILOT DISTRICT DATA REPORT***

***Report No. 45e
Luxor District***

February 2002

**Water Policy Program
International Resources Group Winrock International Nile Consultants**

**Task Order No. 807
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***MATCHING IRRIGATION SUPPLIES AND DEMANDS
PILOT DISTRICT DATA REPORT – LUXOR***

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For
United States Agency for International Development/Egypt

Environmental Policy and Institutional Strengthening Indefinite Quantity Contract (EPIQ)
Partners: International Resources Group, Winrock International,
and Harvard Institute for International Development
Subcontractors: PADCO; Management Systems International; and Development Alternatives, Inc.
Collaborating Institutions: Center for Naval Analysis Corporation; Conservation International; KNB Engineering and
Applied Sciences, Inc.; Keller-Bliesner Engineering; Resource Management International, Inc.;
Tellus Institute; Urban Institute; and World Resources Institute

1 Introduction

1.1 Overview

The Agricultural Policy Reform Program (APRP) is a United States Agency for International Development (USAID) grant program involving several ministries. The Ministry of Agriculture and Land Reclamation (MALR) is the primary Egyptian governmental agency charged with support of agricultural production. The Ministry of Water Resources and Irrigation (MWRI) has the prime management responsibility for Egypt's water resources. The MALR, MWRI and USAID, under the umbrella of the APRP, jointly designed an agricultural and water policy package, which consists of integrated policy and institutional reforms. USAID supports the ministries' efforts through annual cash transfers based on performance in achieving identified and agreed-upon policy reform benchmarks and technical assistance.

Technical assistance for the water policy analysis activity is provided through a task order (Contract PCE-I-00-96-00002-00, Task Order 807) under the umbrella of the Environmental Policy and Institutional Strengthening Indefinite Quantity Contract (EPIQ) between USAID and a consortium headed by the International Resources Group (IRG) and Winrock International. Local technical assistance and administrative support is provided through a subcontract with Nile Consultants.

1.2 Purpose of the Report

This report presents data collected as part of the activities of MWRI and MALR under the Tranche IV, C.1 Benchmark, which states:

The GOE (MWRI and MALR jointly) will establish a system that improves the flow of real-time information between the Ministries with respect to irrigation demands and supplies.

Satisfactory achievement of the BM required the accomplishment of two verification indicators:

1. A pilot program will be initiated by the MWRI and MALR in one irrigation district in each of two governorates for mutual information transfer for cropping patterns and calendars and water supplies by December 31, 2000.
2. A joint MALR/MWRI national policy for the application of the pilot program will be approved by the two Ministers by December 31, 2001.

The overall timeline for work on this BM is July 31, 1999 – December 31, 2001, which is divided into two phases:

- Phase I: July 31, 1999 – December 31, 2000
- Phase II: January 1, 2001 – December 31, 2001.

During Phase I, the two ministries successfully established a pilot program in five irrigation districts, in five different governorates involving four separate irrigation directorates covering Lower, Middle, and Upper Egypt. The APRP Water Policy Program Report No. 33 (December 2000) documented details of this pilot program. Further documentation of the

benchmark activities and results are given in APRP Water Policy Program Report No. 45 (December 2001).

This is a data report for the Luxor pilot district covering the period from March 1, 2000, through September 30, 2001. It is one of five separate data reports – one report for each pilot irrigation district. The other four data reports (numbered 45a, 45b, 45c, and 45d) are for the other pilot districts: Abou Hummus, Abou Kebir, Beba, and East Isna, respectively.

1.3 Organization of the Report

This report consists of this brief introduction, information about the district, information about the different data collected, calibration relationships, and data presented both as tables and graphs in the following chapters:

Chapter 2	Information about Luxor Irrigation District
Chapter 3	Cropping pattern information
Chapter 4	Crop water needs Microsoft Excel district-level user's manual
Chapter 5	Crop water needs Microsoft Excel model administrator user's manual
Chapter 6	Crop water needs Microsoft Excel district calculation results
Chapter 7	Crop water needs Microsoft Access user's manual
Chapter 8	Crop water needs Microsoft Access district analysis
Chapter 9	Water-monitoring program

Included with this report are two IBM-compatible 3.5" floppy disks that contain the computer programs and data files used in this report. The computer programs are intended for use by district engineers involved in implementing the MISD policy and discharging their responsibilities related to improving water delivery to more closely match crop water demands. This report can be used as a handbook for districts new to the MISD concepts and processes. Disk 1 contains the Microsoft Excel-based versions of software. The specific contents of Disk 1 are:

1. A folder named "Egy" that has the FAO CLIMWAT weather records from 28 sites in Egypt listed in Table A-1 of Chapter 5.
2. The workbook named "Canal Demand" and its three associated cropping history files: "current", "expected", and "planting". Canal Demand uses the MALR cropping pattern information to calculate crop water needs for each half-month period.
3. The following data files:
 - a. "Crop Pattern – Luxor" that contains the cropping pattern information for the Luxor district obtained from MALR and used as input to Canal Demand.
 - b. "Crops & Needs – Luxor" that contains results of calculations of crop water needs output from Canal Demand for the Luxor district.
 - c. "DEMO – Luxor" that is an Excel Workbook used for organizing and displaying the results of Canal Demand and comparing the crop water needs with water delivered to the Luxor district.

Disk 2 contains the Microsoft Access-based versions of the software. The specific contents of Disk 2 are:

1. A compressed version of the Access tool in a file named "MISD_Tool.zip".

2. A file named “WinZip32.exe”. This is the program to be used to decompress the “.zip” file.

Note: When the “.zip” file is decompressed, it will extract the Microsoft Access tool software named “MISD_Tool.MDB”.

2 Information About Luxor Irrigation District

2.1 Command Area and Overlap with MALR Districts

The Luxor Irrigation District is one of four irrigation districts that constitute the Isna Inspectorate that is one of the three inspectorates in the Qena Irrigation Directorate within the Qena Governorate. The command area of the district is about 50,000 feddans as estimated by the MWRI. The irrigation district boundary overlaps with three district level agricultural administrations, Luxor, Isna, and Qous, but the major part of command area is in Luxor Agricultural Administration.

2.2 Canal System

The Luxor Irrigation District gets its water from two main sources, the Kallabia Canal and the Biadia pump station. Water is delivered to users through many branch canals of different orders. There are 10 second order canals, 20 third order canals, and 9 fourth order canals. The area irrigated by second order canals is about 42% of the total district command area, 39% by third order canals, and 19% by fourth order canals. There is no water delivered directly to users from the first order main canals.

Canal length varies with the canal order and location. The average branch canal length of the second order is about 8.5 km with 17.5 km maximum and 1.7 km minimum. The average length of third order canals is about 4.2 km with 9.7 km maximum and 1.1 km minimum. These values for fourth order canals are 4.1, 9.5, and 1.2 km, respectively.

2.3 Water Distribution System in the District

Water is allocated to the district branch canals based on a two-turn rotation. The on-period and off-period are both seven days. Water is delivered on the basis of maintaining the target water levels in the branch canal to allow for diverting water from canals to field mesqas. Therefore it is important that gatekeepers monitor water levels. This monitoring is done with marble gauges that exist at canal head regulators (upstream and downstream), canal ends and sometimes at the intermediate cross regulators. Telemetry stations are installed at two locations, the Kobah and the Elhebeil regulators on the Kallabia Canal and record the water levels on a two-hour basis.

Figure 2-1. Location of the Luxor Irrigation District in the Qena Directorate.

3 Cropping Pattern Information

Table 3-1. Raw data on cropping pattern for Luxor Irrigation District collected from May 16, 2000 through September 30, 2001, from file “Crop Pattern – Luxor” on disk.

No	Canal	Area (feddan)	Existing, 16 May 2000						Expected, 1 Jun 2000					
			Sugar	Maize	Sems	Garde	Other	Fallow	Sugar	Maize	Sems	Garde	Other	Fallow
1	Elmala	1519	786	325	35	99	136	138	884	325	35	99	77	99
2	Elslamia - South	104	2	40	30	25	7	0	2	40	30	25	7	0
3	Sahel Elshaab	95	55	5	0	19	16	0	63	5		19		8
4	Sahel Elodisat	781	430	29		186	136	0	486	29		186	19	61
5	Elslamia - North	1418	396	689	75	23	89	146	468	689	75	23	106	57
6	Ganabit Elbostan	425	121	213	25	8	18	40	137	213	25	8	20	22
7	Elhosha	1428	649	496	10	1	43	229	721	496	10	1	85	115
8	Elhebal Main	1193	403	462	116	28	61	123	452	462	116	28	67	68
9	Elhebal East	1212	433	551	32	26	54	116	487	551	32	26	56	60
10	Gnabit Elhebal East	701	320	264	18	4	15	80	360	264	18	4	22	33
11	Elalia New	1368	460	236	116	64	146	346	519	236	116	64	167	266
12	Elawima	307	4	167	52	35	49	0	4	167	52	35	49	0
13	Elglabia	496	122	204	74	28	43	25	136	204	74	28	30	24
14	Metawe	296	0	160	33	7	55	41	0	160	33	7	96	0
15	Ganabit Elhebel West	325	219	10	10	12	15	59	256	10	10	12	7	30
16	Elshekhh Branach	524	296	101	38		10	79	332	101	38		18	35
17	Elkarnak East	1940	796	564	88	31	170	291	900	564	88	31	279	78
18	Ganabit Elkarnak East	1190	511	211	121	18	103	226	607	211	121	18	168	65
19	Elroda	240	157	35			10	38	171	35			17	17
20	Eloxour	3407	1897	715	156	22	103	514	2136	715	156	22	142	236
21	Ganabit Elkarnak West	1393	801	232	37	4	66	253	906	232	37	4	126	88
22	Ganabit Elkarnak (1)	153	82	15	10	1	12	33	91	15	10	1	22	14
23	Ganabit Elkarnak (2)	623	288	145	15	2	49	124	334	145	15	2	92	35
24	Ganabit Elkarnak (3)	119	64	20	5		10	20	71	20	5		16	7
25	Eloxour Branch 1	253	57	111	48		8	29	72	111	48		14	8
26	Eloxour Branch 2	368	223	54	5		17	69	252	54	5		30	27
27	Eloxour Branch 3	249	151	37		1	13	47	172	37		1	22	17
28	Sahel Eleshy	1172	440	229	100	155	222	26	503	229	100	155	136	49
29	Elzena	242	17	95	40	30	60	0	20	95	40	30	54	3
30	Eloxour Branch 4	260	146	20	5		25	64	173	20	5		46	16
31	Eloxour Branch 5	322	192	35	16		7	72	238	35	16		7	26
32	Eloxour Branch 6	123	97				0	26	111					12
33	Elsaidea	330	140	86	10	12	37	45	154	86	10	12	51	17
34	Eloxour Branch 7	485	353	14			13	105	405	14			22	44
35	Elodesy	144	77	24		6	15	22	81	24		6	24	9
36	Elwatoria	1851	530	605	319	89	172	136	607	605	319	89	164	67
37	Elalia	487	134	135	104	8	44	62	151	135	104	8	73	16
38	Elwelieb	222	74	16	60	7	29	36	87	16	60	7	43	9
39	Syalt Bdran	101	0	76	18	1	5	1	0	76	18	1	6	0
40	Nile	623	191	81	48	241	60	2	222	81	48	241	18	13
41	Ground Water	727	160	322	48	5	82	110	189	322	48	5	154	9
42	Elklabia	94	0	71		10	13	0	0	71		10	13	0
43	Elbiadia	7	0	7			0	0	0	7				0

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 1 Jun 2000						Expected, 16 Jun 2000					
			Sugar	Maize	Sems	Garde	Other	Fallow	Sugar	Maize	Sems	Garde	Other	Fallow
1	Elmala	1519	983	325	35	99	77	0	983	325	35	99	77	0
2	Elslamia - South	104	2	40	30	25	7	0	2	40	30	25	7	0
3	Sahel Elshaab	95	71	5		19		0	71	5		19		0
4	Sahel Elodisat	781	547	29		186	19	0	547	29		186	19	0
5	Elslamia - North	1418	525	689	75	23	106	0	525	689	75	23	106	0
6	Ganabit Elbostan	425	159	213	25	8	20	0	159	213	25	8	20	0
7	Elhosha	1428	836	496	10	1	85	0	836	496	10	1	85	0
8	Elhebal Main	1193	520	462	116	28	67	0	520	462	116	28	67	0
9	Elhebal East	1212	547	551	32	26	56	0	547	551	32	26	56	0
10	Gnabit Elhebal East	701	393	264	18	4	22	0	393	264	18	4	22	0
11	Elalia New	1368	585	436	116	64	167	0	585	436	116	64	167	0
12	Elawima	307	4	167	52	35	49	0	4	167	52	35	49	0
13	Elglabia	496	160	204	74	28	30	0	160	204	74	28	30	0
14	Metawe	296	0	160	33	7	96	0	160	33	7	96	0	0
15	Ganabit Elhebel West	325	286	10	10	12	7	0	286	10	10	12	7	0
16	Elshekh Branach	524	367	101	38		18	0	367	101	38		18	0
17	Elkarnak East	1940	978	564	88	31	279	0	978	564	88	31	279	0
18	Ganabit Elkarnak East	1190	672	211	121	18	168	0	672	211	121	18	168	0
19	Elroda	240	188	35			17	0	188	35			17	0
20	Eloxour	3407	2372	715	156	22	142	0	2372	715	156	22	142	0
21	Ganabit Elkarnak West	1393	994	232	37	4	126	0	994	232	37	4	126	0
22	Ganabit Elkarnak (1)	153	105	15	10	1	22	0	105	15	10	1	22	0
23	Ganabit Elkarnak (2)	623	369	145	15	2	92	0	369	145	15	2	92	0
24	Ganabit Elkarnak (3)	119	78	20	5		16	0	78	20	5		16	0
25	Eloxour Branch 1	253	80	111	48		14	0	80	111	48		14	0
26	Eloxour Branch 2	368	279	54	5		30	0	279	54	5		30	0
27	Eloxour Branch 3	249	189	37		1	22	0	189	37		1	22	0
28	Sahel Eleshy	1172	552	229	100	155	136	0	552	229	100	155	136	0
29	Elzena	242	23	95	40	30	54	0	23	95	40	30	54	0
30	Eloxour Branch 4	260	189	20	5		46	0	189	20	5		46	0
31	Eloxour Branch 5	322	264	35	16		7	0	264	35	16		7	0
32	Eloxour Branch 6	123	123					0	123					0
33	Elsaida	330	171	86	10	12	51	0	171	86	10	12	51	0
34	Eloxour Branch 7	485	449	14			22	0	449	14			22	0
35	Elodesy	144	90	24		6	24	0	90	24		6	24	0
36	Elwatia	1851	674	605	319	89	164	0	674	605	319	89	164	0
37	Elalia	487	167	135	104	8	73	0	167	135	104	8	73	0
38	Elweliab	222	96	16	60	7	43	0	96	16	60	7	43	0
39	Syalt Bdran	101		76	18	1	6	0		76	18	1	6	0
40	Nile	623	235	81	48	241	18	0	235	81	48	241	18	0
41	Ground Water	727	198	322	48	5	154	0	198	322	48	5	154	0
42	Elklabia	94		71		10	13	0		71		10	13	0
43	Elbiadia	7		7				0		7				0

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 16 Jun 2000						Expected, 1 Jul 2000					
			Sugar	Maize	Sems	Garde	Other	Fallow	Sugar	Maize	Sems	Garde	Other	Fallow
1	Elmala	1519	983	325	35	99	77	0	983	325	35	99	77	0
2	Elslamia - South	104	2	40	30	25	7	0	2	40	30	25	7	0
3	Sahel Elshaab	95	71	5		19		0	71	5		19		0
4	Sahel Elodisat	781	547	29		186	19	0	547	29		186	19	0
5	Elslamia - North	1418	525	689	75	23	106	0	525	689	75	23	106	0
6	Ganabit Elbostan	425	159	213	25	8	20	0	159	213	25	8	20	0
7	Elhosha	1428	836	496	10	1	85	0	836	496	10	1	85	0
8	Elhebal Main	1193	520	462	116	28	67	0	520	462	116	28	67	0
9	Elhebal East	1212	547	551	32	26	56	0	547	551	32	26	56	0
10	Gnabit Elhebal East	701	393	264	18	4	22	0	393	264	18	4	22	0
11	Elalia New	1368	585	436	116	64	167	0	585	436	116	64	167	0
12	Elawima	307	4	167	52	35	49	0	4	167	52	35	49	0
13	Elglabia	496	160	204	74	28	30	0	160	204	74	28	30	0
14	Metawe	296		160	33	7	96	0		160	33	7	96	0
15	Ganabit Elhebel West	325	286	10	10	12	7	0	286	10	10	12	7	0
16	Elshekh Branach	524	367	101	38		18	0	367	101	38		18	0
17	Elkarnak East	1940	978	564	88	31	279	0	978	564	88	31	279	0
18	Ganabit Elkarnak East	1190	672	211	121	18	168	0	672	211	121	18	168	0
19	Elroda	240	188	35			17	0	188	35			17	0
20	Eloxour	3407	2372	715	156	22	142	0	2372	715	156	22	142	0
21	Ganabit Elkarnak West	1393	994	232	37	4	126	0	994	232	37	4	126	0
22	Ganabit Elkarnak (1)	153	105	15	10	1	22	0	105	15	10	1	22	0
23	Ganabit Elkarnak (2)	623	369	145	15	2	92	0	369	145	15	2	92	0
24	Ganabit Elkarnak (3)	119	78	20	5		16	0	78	20	5		16	0
25	Eloxour Branch 1	253	80	111	48		14	0	80	111	48		14	0
26	Eloxour Branch 2	368	279	54	5		30	0	279	54	5		30	0
27	Eloxour Branch 3	249	189	37		1	22	0	189	37		1	22	0
28	Sahel Eleshy	1172	552	229	100	155	136	0	552	229	100	155	136	0
29	Elzena	242	23	95	40	30	54	0	23	95	40	30	54	0
30	Eloxour Branch 4	260	189	20	5		46	0	189	20	5		46	0
31	Eloxour Branch 5	322	264	35	16		7	0	264	35	16		7	0
32	Eloxour Branch 6	123	123					0	123					0
33	Elsaidea	330	171	86	10	12	51	0	171	86	10	12	51	0
34	Eloxour Branch 7	485	449	14			22	0	449	14			22	0
35	Elodesy	144	90	24		6	24	0	90	24		6	24	0
36	Elwatia	1851	674	605	319	89	164	0	674	605	319	89	164	0
37	Elalia	487	167	135	104	8	73	0	167	135	104	8	73	0
38	Elweliab	222	96	16	60	7	43	0	96	16	60	7	43	0
39	Syalt Bdran	101		76	18	1	6	0		76	18	1	6	0
40	Nile	623	235	81	48	241	18	0	235	81	48	241	18	0
41	Ground Water	727	198	322	48	5	154	0	198	322	48	5	154	0
42	Elklabia	94		71		10	13	0		71		10	13	0
43	Elbiadia	7		7				0		7				0

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 16 Jul 2000						Expected, 1 Aug 2000					
			Sugar	Maize	Sems	Garde	Other	Fallow	Sugar	Maize	Sems	Garde	Other	Fallow
1	Elmala	1519	983	325	35	99	77	0	983	325	35	99	77	0
2	Eislamia - South	104	2	40	30	25	7	0	2	40	30	25	7	0
3	Sahel Elshaab	95	71	5		19		0	71	5		19		0
4	Sahel Elodisat	781	547	29		186	19	0	547	29		186	19	0
5	Eislamia - North	1418	525	689	75	23	106	0	525	689	75	23	106	0
6	Ganabit Elbostan	425	159	213	25	8	20	0	159	213	25	8	20	0
7	Elhosha	1428	836	496	10	1	85	0	836	496	10	1	85	0
8	Elhebal Main	1193	520	462	116	28	67	0	520	462	116	28	67	0
9	Elhebal East	1212	547	551	32	26	56	0	547	551	32	26	56	0
10	Gnabit Elhebal East	701	393	264	18	4	22	0	393	264	18	4	22	0
11	Elalia New	1368	585	436	116	64	167	0	585	436	116	64	167	0
12	Elawima	307	4	167	52	35	49	0	4	167	52	35	49	0
13	Elglabia	496	160	204	74	28	30	0	160	204	74	28	30	0
14	Metawe	296		160	33	7	96	0	160	33	7	96		0
15	Ganabit Elhebel West	325	286	10	10	12	7	0	286	10	10	12	7	0
16	Elshekh Branach	524	367	101	38		18	0	367	101	38		18	0
17	Elkarnak East	1940	978	564	88	31	279	0	978	564	88	31	279	0
18	Ganabit Elkarnak East	1190	672	211	121	18	168	0	672	211	121	18	168	0
19	Elroda	240	188	35			17	0	188	35			17	0
20	Eloxour	3407	2372	715	156	22	142	0	2372	715	156	22	142	0
21	Ganabit Elkarnak West	1393	994	232	37	4	126	0	994	232	37	4	126	0
22	Ganabit Elkarnak (1)	153	105	15	10	1	22	0	105	15	10	1	22	0
23	Ganabit Elkarnak (2)	623	369	145	15	2	92	0	369	145	15	2	92	0
24	Ganabit Elkarnak (3)	119	78	20	5		16	0	78	20	5		16	0
25	Eloxour Branch 1	253	80	111	48		14	0	80	111	48		14	0
26	Eloxour Branch 2	368	279	54	5		30	0	279	54	5		30	0
27	Eloxour Branch 3	249	189	37		1	22	0	189	37		1	22	0
28	Sahel Elesh	1172	552	229	100	155	136	0	552	229	100	155	136	0
29	Elzena	242	23	95	40	30	54	0	23	95	40	30	54	0
30	Eloxour Branch 4	260	189	20	5		46	0	189	20	5		46	0
31	Eloxour Branch 5	322	264	35	16		7	0	264	35	16		7	0
32	Eloxour Branch 6	123	123					0	123					0
33	Elsaidea	330	171	86	10	12	51	0	171	86	10	12	51	0
34	Eloxour Branch 7	485	449	14			22	0	449	14			22	0
35	Elodesy	144	90	24		6	24	0	90	24		6	24	0
36	Elwatia	1851	674	605	319	89	164	0	674	605	319	89	164	0
37	Elalia	487	167	135	104	8	73	0	167	135	104	8	73	0
38	Elweliab	222	96	16	60	7	43	0	96	16	60	7	43	0
39	Syalt Bdran	101		76	18	1	6	0		76	18	1	6	0
40	Nile	623	235	81	48	241	18	0	235	81	48	241	18	0
41	Ground Water	727	198	322	48	5	154	0	198	322	48	5	154	0
42	Elklabia	94		71		10	13	0		71		10	13	0
43	Elbiadia	7		7				0		7				0

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 1 Aug 2000						Expected, 16 Aug 2000					
			Sugar	Maize	Sems	Garde	Other	Fallow	Sugar	Maize	Sems	Garde	Other	Fallow
1	Elmala	1519	983	325	35	99	77	0	983	325	35	99	77	0
2	Elslamia - South	104	2	40	30	25	7	0	2	40	30	25	7	0
3	Sahel Elshaab	95	71	5		19		0	71	5		19		0
4	Sahel Elodisat	781	547	29		186	19	0	547	29		186	19	0
5	Elslamia - North	1418	525	689	75	23	106	0	525	689	75	23	106	0
6	Ganabit Elbostan	425	159	213	25	8	20	0	159	213	25	8	20	0
7	Elhosha	1428	836	496	10	1	85	0	836	496	10	1	85	0
8	Elhebal Main	1193	520	462	116	28	67	0	520	462	116	28	67	0
9	Elhebal East	1212	547	551	32	26	56	0	547	551	32	26	56	0
10	Gnabit Elhebal East	701	393	264	18	4	22	0	393	264	18	4	22	0
11	Elalia New	1368	585	436	116	64	167	0	585	436	116	64	167	0
12	Elawima	307	4	167	52	35	49	0	4	167	52	35	49	0
13	Elglabia	496	160	204	74	28	30	0	160	204	74	28	30	0
14	Metawe	296		160	33	7	96	0		160	33	7	96	0
15	Ganabit Elhebel West	325	286	10	10	12	7	0	286	10	10	12	7	0
16	Elshekh Branach	524	367	101	38		18	0	367	101	38		18	0
17	Elkarnak East	1940	978	564	88	31	279	0	978	564	88	31	279	0
18	Ganabit Elkarnak East	1190	672	211	121	18	168	0	672	211	121	18	168	0
19	Elroda	240	188	35			17	0	188	35			17	0
20	Eloxour	3407	2372	715	156	22	142	0	2372	715	156	22	142	0
21	Ganabit Elkarnak West	1393	994	232	37	4	126	0	994	232	37	4	126	0
22	Ganabit Elkarnak (1)	153	105	15	10	1	22	0	105	15	10	1	22	0
23	Ganabit Elkarnak (2)	623	369	145	15	2	92	0	369	145	15	2	92	0
24	Ganabit Elkarnak (3)	119	78	20	5		16	0	78	20	5		16	0
25	Eloxour Branch 1	253	80	111	48		14	0	80	111	48		14	0
26	Eloxour Branch 2	368	279	54	5		30	0	279	54	5		30	0
27	Eloxour Branch 3	249	189	37		1	22	0	189	37		1	22	0
28	Sahel Elesh	1172	552	229	100	155	136	0	552	229	100	155	136	0
29	Elzena	242	23	95	40	30	54	0	23	95	40	30	54	0
30	Eloxour Branch 4	260	189	20	5		46	0	189	20	5		46	0
31	Eloxour Branch 5	322	264	35	16		7	0	264	35	16		7	0
32	Eloxour Branch 6	123	123					0	123					0
33	Elsaidea	330	171	86	10	12	51	0	171	86	10	12	51	0
34	Eloxour Branch 7	485	449	14			22	0	449	14			22	0
35	Elodesy	144	90	24		6	24	0	90	24		6	24	0
36	Elwatia	1851	674	605	319	89	164	0	674	605	319	89	164	0
37	Elalia	487	167	135	104	8	73	0	167	135	104	8	73	0
38	Elweliab	222	96	16	60	7	43	0	96	16	60	7	43	0
39	Syalt Bdran	101		76	18	1	6	0		76	18	1	6	0
40	Nile	623	235	81	48	241	18	0	235	81	48	241	18	0
41	Ground Water	727	198	322	48	5	154	0	198	322	48	5	154	0
42	Elklabia	94		71		10	13	0		71		10	13	0
43	Elbiadia	7		7				0		7				0

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 16 Aug 2000						Expected, 1 Sep 2000					
			Sugar	Maize	Sems	Garde	Other	Fallow	Sugar	Maize	Sems	Garde	Other	Fallow
1	Elmala	1519	983	325	35	99	77	0	983	325	35	99	77	0
2	Elslamia - South	104	2	40	30	25	7	0	2	40	30	25	7	0
3	Sahel Elshaab	95	71	5		19		0	71	5		19		0
4	Sahel Elodisat	781	547	29		186	19	0	547	29		186	19	0
5	Elslamia - North	1418	525	689	75	23	106	0	525	689	75	23	106	0
6	Ganabit Elbostan	425	159	213	25	8	20	0	159	213	25	8	20	0
7	Elhosha	1428	836	496	10	1	85	0	836	496	10	1	85	0
8	Elhebal Main	1193	520	462	116	28	67	0	520	462	116	28	67	0
9	Elhebal East	1212	547	551	32	26	56	0	547	551	32	26	56	0
10	Gnabit Elhebal East	701	393	264	18	4	22	0	393	264	18	4	22	0
11	Elalia New	1368	585	436	116	64	167	0	585	436	116	64	167	0
12	Elawima	307	4	167	52	35	49	0	4	167	52	35	49	0
13	Elglabia	496	160	204	74	28	30	0	160	204	74	28	30	0
14	Metawe	296		160	33	7	96	0		160	33	7	96	0
15	Ganabit Elhebel West	325	286	10	10	12	7	0	286	10	10	12	7	0
16	Elshekh Branach	524	367	101	38		18	0	367	101	38		18	0
17	Elkarnak East	1940	978	564	88	31	279	0	978	564	88	31	279	0
18	Ganabit Elkarnak East	1190	672	211	121	18	168	0	672	211	121	18	168	0
19	Elroda	240	188	35			17	0	188	35			17	0
20	Eloxour	3407	2372	715	156	22	142	0	2372	715	156	22	142	0
21	Ganabit Elkarnak West	1393	994	232	37	4	126	0	994	232	37	4	126	0
22	Ganabit Elkarnak (1)	153	105	15	10	1	22	0	105	15	10	1	22	0
23	Ganabit Elkarnak (2)	623	369	145	15	2	92	0	369	145	15	2	92	0
24	Ganabit Elkarnak (3)	119	78	20	5		16	0	78	20	5		16	0
25	Eloxour Branch 1	253	80	111	48		14	0	80	111	48		14	0
26	Eloxour Branch 2	368	279	54	5		30	0	279	54	5		30	0
27	Eloxour Branch 3	249	189	37		1	22	0	189	37		1	22	0
28	Sahel Elesh	1172	552	229	100	155	136	0	552	229	100	155	136	0
29	Elzena	242	23	95	40	30	54	0	23	95	40	30	54	0
30	Eloxour Branch 4	260	189	20	5		46	0	189	20	5		46	0
31	Eloxour Branch 5	322	264	35	16		7	0	264	35	16		7	0
32	Eloxour Branch 6	123	123					0	123					0
33	Elsaidea	330	171	86	10	12	51	0	171	86	10	12	51	0
34	Eloxour Branch 7	485	449	14			22	0	449	14			22	0
35	Elodesy	144	90	24		6	24	0	90	24		6	24	0
36	Elwatia	1851	674	605	319	89	164	0	674	605	319	89	164	0
37	Elalia	487	167	135	104	8	73	0	167	135	104	8	73	0
38	Elweliab	222	96	16	60	7	43	0	96	16	60	7	43	0
39	Syalt Bdran	101		76	18	1	6	0		76	18	1	6	0
40	Nile	623	235	81	48	241	18	0	235	81	48	241	18	0
41	Ground Water	727	198	322	48	5	154	0	198	322	48	5	154	0
42	Elklabia	94		71		10	13	0		71		10	13	0
43	Elbiadia	7		7				0		7				0

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 1 Sep 2000						Expected, 16 Sep 2000					
			Sugar	Maize	Sems	Garde	Other	Fallow	Sugar	Maize	Sems	Garde	Other	Fallow
1	Elmala	1519	983	325	35	99	77	0	983	325	35	99	77	0
2	Eislamia - South	104	2	40	30	25	7	0	2	40	30	25	7	0
3	Sahel Elshaab	95	71	5		19		0	71	5		19		0
4	Sahel Elodisat	781	547	29		186	19	0	547	29		186	19	0
5	Eislamia - North	1418	525	689	75	23	106	0	525	689	75	23	106	0
6	Ganabit Elbostan	425	159	213	25	8	20	0	159	213	25	8	20	0
7	Elhosha	1428	836	496	10	1	85	0	836	496	10	1	85	0
8	Elhebal Main	1193	520	462	116	28	67	0	520	462	116	28	67	0
9	Elhebal East	1212	547	551	32	26	56	0	547	551	32	26	56	0
10	Gnabit Elhebal East	701	393	264	18	4	22	0	393	264	18	4	22	0
11	Elalia New	1368	585	436	116	64	167	0	585	436	116	64	167	0
12	Elawima	307	4	167	52	35	49	0	4	167	52	35	49	0
13	Elglabia	496	160	204	74	28	30	0	160	204	74	28	30	0
14	Metawe	296		160	33	7	96	0		160	33	7	96	0
15	Ganabit Elhebel West	325	286	10	10	12	7	0	286	10	10	12	7	0
16	Elshekh Branach	524	367	101	38		18	0	367	101	38		18	0
17	Elkarnak East	1940	978	564	88	31	279	0	978	564	88	31	279	0
18	Ganabit Elkarnak East	1190	672	211	121	18	168	0	672	211	121	18	168	0
19	Elroda	240	188	35			17	0	188	35			17	0
20	Eloxour	3407	2372	715	156	22	142	0	2372	715	156	22	142	0
21	Ganabit Elkarnak West	1393	994	232	37	4	126	0	994	232	37	4	126	0
22	Ganabit Elkarnak (1)	153	105	15	10	1	22	0	105	15	10	1	22	0
23	Ganabit Elkarnak (2)	623	369	145	15	2	92	0	369	145	15	2	92	0
24	Ganabit Elkarnak (3)	119	78	20	5		16	0	78	20	5		16	0
25	Eloxour Branch 1	253	80	111	48		14	0	80	111	48		14	0
26	Eloxour Branch 2	368	279	54	5		30	0	279	54	5		30	0
27	Eloxour Branch 3	249	189	37		1	22	0	189	37		1	22	0
28	Sahel Elesh	1172	552	229	100	155	136	0	552	229	100	155	136	0
29	Elzena	242	23	95	40	30	54	0	23	95	40	30	54	0
30	Eloxour Branch 4	260	189	20	5		46	0	189	20	5		46	0
31	Eloxour Branch 5	322	264	35	16		7	0	264	35	16		7	0
32	Eloxour Branch 6	123	123					0	123					0
33	Elsaidea	330	171	86	10	12	51	0	171	86	10	12	51	0
34	Eloxour Branch 7	485	449	14			22	0	449	14			22	0
35	Elodesy	144	90	24		6	24	0	90	24		6	24	0
36	Elwatia	1851	674	605	319	89	164	0	674	605	319	89	164	0
37	Elalia	487	167	135	104	8	73	0	167	135	104	8	73	0
38	Elweliab	222	96	16	60	7	43	0	96	16	60	7	43	0
39	Syalt Bdran	101		76	18	1	6	0		76	18	1	6	0
40	Nile	623	235	81	48	241	18	0	235	81	48	241	18	0
41	Ground Water	727	198	322	48	5	154	0	198	322	48	5	154	0
42	Elklabia	94		71		10	13	0		71		10	13	0
43	Elbiadia	7		7				0		7				0

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 16 Sep 2000						Expected, 1 Oct 2000					
			Sugar	Maize	Sems	Garde	Other	Fallow	Sugar	Maize	Sems	Garde	Other	Fallow
1	Elmala	1519	983	325	35	99	77	0	983	325	35	99	77	0
2	Elslamia - South	104	2	40	30	25	7	0	2	40	30	25	7	0
3	Sahel Elshaab	95	71	5		19		0	71	5		19		0
4	Sahel Elodisat	781	547	29		186	19	0	547	29		186	19	0
5	Elslamia - North	1418	525	689	75	23	106	0	525	689	75	23	106	0
6	Ganabit Elbostan	425	159	213	25	8	20	0	159	213	25	8	20	0
7	Elhosha	1428	836	496	10	1	85	0	836	496	10	1	85	0
8	Elhebal Main	1193	520	462	116	28	67	0	520	462	116	28	67	0
9	Elhebal East	1212	547	551	32	26	56	0	547	551	32	26	56	0
10	Gnabit Elhebal East	701	393	264	18	4	22	0	393	264	18	4	22	0
11	Elalia New	1368	585	436	116	64	167	0	585	436	116	64	167	0
12	Elawima	307	4	167	52	35	49	0	4	167	52	35	49	0
13	Elglabia	496	160	204	74	28	30	0	160	204	74	28	30	0
14	Metawe	296		160	33	7	96	0	160	33	7	96		0
15	Ganabit Elhebel West	325	286	10	10	12	7	0	286	10	10	12	7	0
16	Elshekh Branach	524	367	101	38		18	0	367	101	38		18	0
17	Elkarnak East	1940	978	564	88	31	279	0	978	564	88	31	279	0
18	Ganabit Elkarnak East	1190	672	211	121	18	168	0	672	211	121	18	168	0
19	Elroda	240	188	35			17	0	188	35			17	0
20	Eloxour	3407	2372	715	156	22	142	0	2372	715	156	22	142	0
21	Ganabit Elkarnak West	1393	994	232	37	4	126	0	994	232	37	4	126	0
22	Ganabit Elkarnak (1)	153	105	15	10	1	22	0	105	15	10	1	22	0
23	Ganabit Elkarnak (2)	623	369	145	15	2	92	0	369	145	15	2	92	0
24	Ganabit Elkarnak (3)	119	78	20	5		16	0	78	20	5		16	0
25	Eloxour Branch 1	253	80	111	48		14	0	80	111	48		14	0
26	Eloxour Branch 2	368	279	54	5		30	0	279	54	5		30	0
27	Eloxour Branch 3	249	189	37		1	22	0	189	37		1	22	0
28	Sahel Elesh	1172	552	229	100	155	136	0	552	229	100	155	136	0
29	Elzena	242	23	95	40	30	54	0	23	95	40	30	54	0
30	Eloxour Branch 4	260	189	20	5		46	0	189	20	5		46	0
31	Eloxour Branch 5	322	264	35	16		7	0	264	35	16		7	0
32	Eloxour Branch 6	123	123					0	123					0
33	Elsaidea	330	171	86	10	12	51	0	171	86	10	12	51	0
34	Eloxour Branch 7	485	449	14			22	0	449	14			22	0
35	Elodesy	144	90	24		6	24	0	90	24		6	24	0
36	Elwatia	1851	674	605	319	89	164	0	674	605	319	89	164	0
37	Elalia	487	167	135	104	8	73	0	167	135	104	8	73	0
38	Elweliab	222	96	16	60	7	43	0	96	16	60	7	43	0
39	Syalt Bdran	101		76	18	1	6	0		76	18	1	6	0
40	Nile	623	235	81	48	241	18	0	235	81	48	241	18	0
41	Ground Water	727	198	322	48	5	154	0	198	322	48	5	154	0
42	Elklabia	94		71		10	13	0		71		10	13	0
43	Elbiadia	7		7				0		7				0

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 1 Oct 2000						Expected, 16 Oct 2000					
			Sugar	Maize	Sems	Garde	Other	Fallow	Sugar	Maize	Winte	Garde	Other	Fallow
1	Elmala	1519	983	160	0	99	35	242	983	80	40	99	10	307
2	Elslamia - South	104	2	20	0	25	0	57	2	10	12	25	0	55
3	Sahel Elshaab	95	71	0	0	19	0	5	71	0	4	19	0	1
4	Sahel Elodisat	781	547	14	0	186	10	24	547	8	40	186	0	0
5	Elslamia - North	1418	525	340	0	23	50	480	525	150	40	23	15	665
6	Ganabit Elbostan	425	159	105	0	8	10	143	159	50	10	8	3	195
7	Elhosha	1428	836	240	0	1	40	311	836	120	20	1	12	439
8	Elhebal Main	1193	520	230	0	28	35	380	520	100	40	28	10	495
9	Elhebal East	1212	547	275	0	26	25	339	547	130	20	26	8	481
10	Gnabit Elhebal East	701	393	132	0	4	11	161	393	60	9	4	3	232
11	Elalia New	1368	585	118	0	64	80	521	585	55	62	64	26	576
12	Elawima	307	4	85	0	35	22	161	4	50	26	35	8	184
13	Elglabia	496	160	100	0	28	15	193	160	40	25	28	5	238
14	Metawe	296	0	80	0	7	48	161	0	40	25	7	16	208
15	Ganabit Elhebel West	325	286	0	0	12	0	27	286	0	4	12	0	23
16	Elshekh Branach	524	367	50	0		10	97	367	25	11		0	121
17	Elkarnak East	1940	978	280	0	31	130	521	978	120	80	31	40	691
18	Ganabit Elkarnak East	1190	672	105	0	18	85	310	672	50	60	18	20	370
19	Elroda	240	188	18	0		8	26	188	9	4	0	0	39
20	Eloxour	3407	2372	355	0	22	70	588	2372	170	60	22	22	761
21	Ganabit Elkarnak West	1393	994	116	0	4	65	214	994	55	32	4	21	287
22	Ganabit Elkarnak (1)	153	105	7	0	1	10	30	105	0	6	1	0	41
23	Ganabit Elkarnak (2)	623	369	70	0	2	45	137	369	35	20	2	15	182
24	Ganabit Elkarnak (3)	119	78	10	0		8	23	78	5	4		0	32
25	Eloxour Branch 1	253	80	50	0		7	116	80	25	12		0	136
26	Eloxour Branch 2	368	279	25	0		16	48	279	12	7		5	65
27	Eloxour Branch 3	249	189	20	0	1	11	28	189	10	5	1	0	44
28	Sahel Elesh	1172	552	110	0	155	65	290	552	55	75	155	21	314
29	Elzena	242	23	48	0	30	20	121	23	24	24	30	7	134
30	Eloxour Branch 4	260	189	10	0		20	41	189	0	10		7	54
31	Eloxour Branch 5	322	264	15	0		0	43	264	0	5		0	53
32	Eloxour Branch 6	123	123	0	0		0	0	123	0	0		0	0
33	Elsaida	330	171	40	0	12	25	82	171	20	14	12	8	105
34	Eloxour Branch 7	485	449	0	0		10	26	449	0	4		0	32
35	Elodesy	144	90	10	0	6	10	28	90	5	6	6	0	37
36	Elwatia	1851	674	300	0	89	85	703	674	150	120	89	27	791
37	Elalia	487	167	60	0	8	35	217	167	30	40	8	12	230
38	Elweliab	222	96	8	0	7	22	89	96	4	21	7	7	87
39	Syalt Bdran	101	0	35	0	1	0	65	0	17	5	1	0	78
40	Nile	623	235	40	0	241	10	97	235	20	60	241	0	67
41	Ground Water	727	198	115	0	5	75	334	198	57	40	5	20	407
42	Elklabia	94	0	35	0	10	10	39	0	17	4	10	0	63
43	Elbiadia	7	0	0	0		0	7	0	0	0		0	7

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 16 Oct 2000					Expected, 1 Nov 2000				
			Sugar	Wheat	Garde	Others	Fallow	Sugar	Wheat	Garde	Other	Fallow
1	Elmala	1519	985	180	99	72	183	985	180	99	72	183
2	ElIslamia - South	104	13	20	25	23	23	13	20	25	23	23
3	Sahel Elshaab	95	71	0	19	2	3	71	0	19	2	3
4	Sahel Elodisat	781	539	20	186	10	26	539	20	186	10	26
5	ElIslamia - North	1418	531	365	23	119	380	531	365	23	119	380
6	Ganabit Elbostan	425	159	100	8	53	105	159	100	8	53	105
7	Elhosha	1428	850	250	1	71	256	850	250	1	71	256
8	Elhebal Main	1193	521	252	28	129	263	521	252	28	129	263
9	Elhebal East	1212	547	267	26	106	266	547	267	26	106	266
10	Gnabit Elhebal East	701	393	130	4	34	140	393	130	4	34	140
11	Elalia New	1368	586	273	64	146	299	586	273	64	146	299
12	Elawima	307	3	98	35	73	98	3	98	35	73	98
13	Elglabia	496	160	126	28	52	130	160	126	28	52	130
14	Metawe	296	0	137	7	110	42	0	137	7	110	42
15	Ganabit Elhebel West	325	283	10	12	9	11	283	10	12	9	11
16	Elshekhh Branch	524	365	54		41	64	365	54		41	64
17	Elkarnak East	1940	976	366	31	197	370	976	366	31	197	370
18	Ganabit Elkarnak East	1190	681	206	18	80	205	681	206	18	80	205
19	Elroda	240	122	39		39	40	122	39		39	40
20	Eloxour	3407	2324	370	22	282	409	2324	370	22	282	409
21	Ganabit Elkarnak West	1393	912	181	4	104	192	912	181	4	104	192
22	Ganabit Elkarnak (1)	153	105	20	1	7	20	105	20	1	7	20
23	Ganabit Elkarnak (2)	623	380	102	2	24	115	380	102	2	24	115
24	Ganabit Elkarnak (3)	119	78	17		6	18	78	17		6	18
25	Eloxour Branch 1	253	80	51		67	55	80	51		67	55
26	Eloxour Branch 2	368	280	33		15	40	280	33		15	40
27	Eloxour Branch 3	249	206	14	1	14	14	206	14	1	14	14
28	Sahel Elesh	1172	517	183	152	129	191	517	183	152	129	191
29	Elzena	242	23	76	30	38	75	23	76	30	38	75
30	Eloxour Branch 4	260	187	30		13	30	187	30		13	30
31	Eloxour Branch 5	322	255	24		19	24	255	24		19	24
32	Eloxour Branch 6	123	118	0		5	0	118	0		5	0
33	Elsaida	330	173	28	12	86	31	173	28	12	86	31
34	Eloxour Branch 7	485	451	5		24	5	451	5		24	5
35	Elodesy	144	52	32	6	22	32	52	32	6	22	32
36	Elwatra	1851	607	500	89	152	503	607	500	89	152	503
37	Elalia	487	229	94	8	57	99	229	94	8	57	99
38	Elweliab	222	99	39	7	39	38	99	39	7	39	38
39	Syalt Bdran	101	0	32	1	29	39	0	32	1	29	39
40	Nile	623	201	62	241	47	72	201	62	241	47	72
41	Ground Water	727	183	230	5	72	237	183	230	5	72	237
42	Elklabia	94	20	30	10	4	30	20	30	10	4	30
43	Elbiadia	7	0	2		3	2	0	2		3	2

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 1 Nov 2000					Expected, 16 Nov 2000				
			Sugar	Wheat	Garde	Others	Fallow	Sugar	Wheat	Garde	Other	Fallow
1	Elmala	1519	985	180	99	72	183	985	262	99	72	101
2	ElIslamia - South	104	13	20	25	23	23	13	28	25	23	15
3	Sahel Elshaab	95	71	0	19	2	3	71	0	19	2	3
4	Sahel Elodisat	781	539	20	186	10	26	539	27	186	10	19
5	ElIslamia - North	1418	531	365	23	119	380	531	476	23	119	269
6	Ganabit Elbostan	425	159	100	8	53	105	159	144	8	53	61
7	Elhosha	1428	850	250	1	71	256	850	352	1	71	154
8	Elhebal Main	1193	521	252	28	129	263	521	361	28	129	154
9	Elhebal East	1212	547	267	26	106	266	547	401	26	106	132
10	Gnabit Elhebal East	701	393	130	4	34	140	393	195	4	34	75
11	Elalia New	1368	586	273	64	146	299	586	363	64	146	209
12	Elawima	307	3	98	35	73	98	3	140	35	73	56
13	Elglabia	496	160	126	28	52	130	160	177	28	52	79
14	Metawe	296	0	137	7	110	42	0	160	7	110	19
15	Ganabit Elhebel West	325	283	10	12	9	11	283	14	12	9	7
16	Elshekhh Branch	524	365	54	0	41	64	365	74		41	44
17	Elkarnak East	1940	976	366	31	197	370	976	540	31	197	196
18	Ganabit Elkarnak East	1190	681	206	18	80	205	681	305	18	80	106
19	Elroda	240	122	39	0	39	40	122	60		39	19
20	Eloxour	3407	2324	370	22	282	409	2324	403	22	282	376
21	Ganabit Elkarnak West	1393	912	181	4	104	192	912	269	4	104	104
22	Ganabit Elkarnak (1)	153	105	20	1	7	20	105	28	1	7	12
23	Ganabit Elkarnak (2)	623	380	102	2	24	115	380	142	2	24	75
24	Ganabit Elkarnak (3)	119	78	17	0	6	18	78	25		6	10
25	Eloxour Branch 1	253	80	51	0	67	55	80	76		67	30
26	Eloxour Branch 2	368	280	33	0	15	40	280	45		15	28
27	Eloxour Branch 3	249	206	14	1	14	14	206	20	1	14	8
28	Sahel Elesh	1172	517	183	152	129	191	517	270	152	129	104
29	Elzena	242	23	76	30	38	75	23	106	30	38	45
30	Eloxour Branch 4	260	187	30	0	13	30	187	42		13	18
31	Eloxour Branch 5	322	255	24	0	19	24	255	36		19	12
32	Eloxour Branch 6	123	118	0	0	5	0	118	0		5	0
33	Elsaida	330	173	28	12	86	31	173	41	12	86	18
34	Eloxour Branch 7	485	451	5	0	24	5	451	7		24	3
35	Elodesy	144	52	32	6	22	32	52	48	6	22	16
36	Elwatta	1851	607	500	89	152	503	607	742	89	152	261
37	Elalia	487	229	94	8	57	99	229	131	8	57	62
38	Elweliab	222	99	39	7	39	38	99	54	7	39	23
39	Syalt Bdran	101	0	32	1	29	39	0	47	1	29	24
40	Nile	623	201	62	241	47	72	201	90	241	47	44
41	Ground Water	727	183	230	5	72	237	183	341	5	72	126
42	Elklabia	94	20	30	10	4	30	20	36	10	4	24
43	Elbiadia	7	0	2	0	3	2	0	2		3	2

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 16 Nov 2000					Expected, 1 Dec 2000				
			Sugar	Wheat	Garde	Others	Fallow	Sugar	Wheat	Garde	Other	Fallow
1	Elmala	1519	890	322	99	72	136	800	363	99	72	185
2	ElIslamia - South	104	12	40	25	23	4	11	43	25	23	2
3	Sahel Elshaab	95	64	3	19	2	7	27	3	19	2	44
4	Sahel Elodisat	781	485	39	186	10	61	435	46	186	10	104
5	ElIslamia - North	1418	485	676	23	119	115	435	745	23	119	96
6	Ganabit Elbostan	425	143	195	8	53	26	130	205	8	53	29
7	Elhosha	1428	765	506	1	71	85	680	506	1	71	170
8	Elhebal Main	1193	475	500	28	129	61	425	515	28	129	96
9	Elhebal East	1212	497	516	26	106	67	443	533	26	106	104
10	Gnabit Elhebal East	701	353	210	4	34	100	315	270	4	34	78
11	Elalia New	1368	528	475	64	146	155	475	573	64	146	110
12	Elawima	307	2	192	35	73	5	2	196	35	73	1
13	Elglabia	496	145	230	28	52	41	130	256	28	52	30
14	Metawe	296	0	170	7	110	9	0	179	7	110	0
15	Ganabit Elhebel West	325	255	21	12	9	28	230	21	12	9	53
16	Elshekhh Branch	524	330	100	0	41	53	300	118		41	65
17	Elkarnak East	1940	878	722	31	197	112	790	736	31	197	186
18	Ganabit Elkarnak East	1190	611	406	18	80	75	540	411	18	80	141
19	Elroda	240	115	72	0	39	14	98	79		39	24
20	Eloxour	3407	2090	766	22	282	247	1870	779	22	282	454
21	Ganabit Elkarnak West	1393	882	373	4	104	30	790	373	4	104	122
22	Ganabit Elkarnak (1)	153	95	38	1	7	12	85	40	1	7	20
23	Ganabit Elkarnak (2)	623	342	209	2	24	46	305	217	2	24	75
24	Ganabit Elkarnak (3)	119	71	35	0	6	7	65	35		6	13
25	Eloxour Branch 1	253	72	106	0	67	8	64	106		67	16
26	Eloxour Branch 2	368	250	73	0	15	30	220	73		15	60
27	Eloxour Branch 3	249	186	28	1	14	20	165	28	1	14	41
28	Sahel Elesh	1172	467	369	152	129	55	415	374	152	129	102
29	Elzena	242	21	142	30	38	11	19	151	30	38	4
30	Eloxour Branch 4	260	170	60	0	13	17	153	60		13	34
31	Eloxour Branch 5	322	230	48	0	19	25	205	48		19	50
32	Eloxour Branch 6	123	108	0	0	5	10	100	0		5	18
33	Elsaida	330	156	59	12	86	17	140	59	12	86	33
34	Eloxour Branch 7	485	406	10	0	24	45	369	10		24	82
35	Elodesy	144	47	64	6	22	5	42	64	6	22	10
36	Elwatta	1851	547	989	89	152	74	485	1003	89	152	122
37	Elalia	487	210	186	8	57	26	186	193	8	57	43
38	Elweliab	222	90	78	7	39	8	81	78	7	39	17
39	Syalt Bdran	101	0	71	1	29	0	0	71	1	29	0
40	Nile	623	180	128	241	47	27	160	135	241	47	40
41	Ground Water	727	165	453	5	72	32	147	467	5	72	36
42	Elklabia	94	18	60	10	4	2	16	60	10	4	4
43	Elbiadia	7	0	3	0	3	1	0	4		3	0

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 1 Dec 2000					Expected, 16 Dec 2000				
			Sugar	Wheat	Garde	Others	Fallow	Sugar	Wheat	Garde	Other	Fallow
1	Elmala	1519	800	363	99	72	185	690	363	99	72	295
2	ElIslamia - South	104	11	43	25	23	2	9	43	25	23	4
3	Sahel Elshaab	95	57	3	19	2	14	50	3	19	2	21
4	Sahel Elodisat	781	435	46	186	10	104	375	46	186	10	164
5	ElIslamia - North	1418	435	745	23	119	96	370	745	23	119	161
6	Ganabit Elbostan	425	130	205	8	53	29	110	205	8	53	49
7	Elhosha	1428	680	506	1	71	170	595	506	1	71	255
8	Elhebal Main	1193	425	515	28	129	96	360	515	28	129	161
9	Elhebal East	1212	443	533	26	106	104	375	533	26	106	172
10	Gnabit Elhebal East	701	315	270	4	34	78	280	270	4	34	113
11	Elalia New	1368	475	573	64	146	110	410	573	64	146	175
12	Elawima	307	2	196	35	73	1	2	196	35	73	1
13	Elglabia	496	130	256	28	52	30	115	256	28	52	45
14	Metawe	296	0	179	7	110	0	0	179	7	110	0
15	Ganabit Elhebel West	325	230	21	12	9	53	200	21	12	9	83
16	Elshekhh Branch	524	300	118	0	41	65	255	118		41	110
17	Elkarnak East	1940	790	736	31	197	186	700	736	31	197	276
18	Ganabit Elkarnak East	1190	540	411	18	80	141	475	411	18	80	206
19	Elroda	240	110	72	0	39	19	85	79		39	37
20	Eloxour	3407	2090	766	22	282	247	1630	779	22	282	694
21	Ganabit Elkarnak West	1393	882	373	4	104	30	630	373	4	104	282
22	Ganabit Elkarnak (1)	153	95	38	1	7	12	70	40	1	7	35
23	Ganabit Elkarnak (2)	623	342	209	2	24	46	275	217	2	24	105
24	Ganabit Elkarnak (3)	119	71	35	0	6	7	50	35		6	28
25	Eloxour Branch 1	253	72	106	0	67	8	56	106		67	24
26	Eloxour Branch 2	368	250	73	0	15	30	196	73		15	84
27	Eloxour Branch 3	249	186	28	1	14	20	140	28	1	14	66
28	Sahel Elesh	1172	467	369	152	129	55	360	374	152	129	157
29	Elzena	242	21	142	30	38	11	14	151	30	38	9
30	Eloxour Branch 4	260	170	60	0	13	17	130	60		13	57
31	Eloxour Branch 5	322	230	48	0	19	25	180	48		19	75
32	Eloxour Branch 6	123	108	0	0	5	10	83	0		5	35
33	Elsaida	330	156	59	12	86	17	121	59	12	86	52
34	Eloxour Branch 7	485	406	10	0	24	45	315	10		24	136
35	Elodesy	144	47	64	6	22	5	36	64	6	22	16
36	Elwatta	1851	547	989	89	152	74	425	1003	89	152	182
37	Elalia	487	210	186	8	57	26	160	193	8	57	69
38	Elweliab	222	90	78	7	39	8	70	78	7	39	28
39	Syalt Bdran	101	0	71	1	29	0	0	71	1	29	0
40	Nile	623	180	128	241	47	27	140	135	241	47	60
41	Ground Water	727	165	453	5	72	32	128	467	5	72	55
42	Elklabia	94	18	60	10	4	2	14	60	10	4	6
43	Elbiadia	7	0	3	0	3	1	0	4		3	0

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 16 Dec 2000					Expected, 1 Jan 2001				
			Sugar	Wheat	Garde	Others	Fallow	Sugar	Wheat	Garde	Other	Fallow
1	Elmala	1519	690	363	99	72	295	590	363	99	72	395
2	ElIslamia - South	104	9	43	25	23	4	8	43	25	23	5
3	Sahel Elshaab	95	50	3	19	2	21	43	3	19	2	28
4	Sahel Elodisat	781	375	46	186	10	164	323	46	186	10	216
5	ElIslamia - North	1418	370	745	23	119	161	320	745	23	119	211
6	Ganabit Elbostan	425	110	205	8	53	49	95	205	8	53	64
7	Elhosha	1428	595	506	1	71	255	510	506	1	71	340
8	Elhebal Main	1193	360	515	28	129	161	313	515	28	129	208
9	Elhebal East	1212	375	533	26	106	172	328	533	26	106	219
10	Gnabit Elhebal East	701	280	270	4	34	113	235	270	4	34	158
11	Elalia New	1368	410	573	64	146	175	351	573	64	146	234
12	Elawima	307	2	196	35	73	1	2	196	35	73	1
13	Elglabia	496	115	256	28	52	45	96	256	28	52	64
14	Metawe	296	0	179	7	110	0	0	179	7	110	0
15	Ganabit Elhebel West	325	200	21	12	9	83	170	21	12	9	113
16	Elshekhh Branch	524	255	118	0	41	110	220	118		41	145
17	Elkarnak East	1940	700	736	31	197	276	585	736	31	197	391
18	Ganabit Elkarnak East	1190	475	411	18	80	206	409	411	18	80	272
19	Elroda	240	85	79	0	39	37	73	79		39	49
20	Eloxour	3407	1630	779	22	282	694	1395	779	22	282	929
21	Ganabit Elkarnak West	1393	630	373	4	104	282	547	373	4	104	365
22	Ganabit Elkarnak (1)	153	70	40	1	7	35	61	40	1	7	44
23	Ganabit Elkarnak (2)	623	275	217	2	24	105	228	217	2	24	152
24	Ganabit Elkarnak (3)	119	50	35	0	6	28	47	35		6	31
25	Eloxour Branch 1	253	56	106	0	67	24	48	106		67	32
26	Eloxour Branch 2	368	196	73	0	15	84	168	73		15	112
27	Eloxour Branch 3	249	140	28	1	14	66	120	28	1	14	86
28	Sahel Elesh	1172	360	374	152	129	157	310	374	152	129	207
29	Elzena	242	14	151	30	38	9	14	151	30	38	9
30	Eloxour Branch 4	260	130	60	0	13	57	112	60		13	75
31	Eloxour Branch 5	322	180	48	0	19	75	153	48		19	102
32	Eloxour Branch 6	123	83	0	0	5	35	71	0		5	47
33	Elsaida	330	121	59	12	86	52	104	59	12	86	69
34	Eloxour Branch 7	485	315	10	0	24	136	271	10		24	180
35	Elodesy	144	36	64	6	22	16	31	64	6	22	21
36	Elwatta	1851	425	1003	89	152	182	364	1003	89	152	243
37	Elalia	487	160	193	8	57	69	137	193	8	57	92
38	Elweliab	222	70	78	7	39	28	60	78	7	39	38
39	Syalt Bdran	101	0	71	1	29	0	0	71	1	29	0
40	Nile	623	140	135	241	47	60	120	135	241	47	80
41	Ground Water	727	128	467	5	72	55	110	467	5	72	73
42	Elklabia	94	14	60	10	4	6	12	60	10	4	8
43	Elbiadia	7	0	4	0	3	0	0	4		3	0

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 1 Jan 2001					Expected, 16 Jan 2001				
			Sugar	Wheat	Garde	Others	Fallow	Sugar	Wheat	Garde	Other	Fallow
1	Elmala	1519	590	363	99	72	395	492	363	99	72	493
2	ElIslamia - South	104	8	43	25	23	5	6	43	25	23	7
3	Sahel Elshaab	95	43	3	19	2	28	35	3	19	2	36
4	Sahel Elodisat	781	323	46	186	10	216	270	46	186	10	269
5	ElIslamia - North	1418	320	745	23	119	211	265	745	23	119	266
6	Ganabit Elbostan	425	95	205	8	53	64	80	205	8	53	79
7	Elhosha	1428	510	506	1	71	340	425	506	1	71	425
8	Elhebal Main	1193	313	515	28	129	208	260	515	28	129	261
9	Elhebal East	1212	328	533	26	106	219	275	533	26	106	272
10	Gnabit Elhebal East	701	235	270	4	34	158	200	270	4	34	193
11	Elalia New	1368	351	573	64	146	234	293	573	64	146	292
12	Elawima	307	2	196	35	73	1	2	196	35	73	1
13	Elglabia	496	96	256	28	52	64	80	256	28	52	80
14	Metawe	296	0	179	7	110	0	0	179	7	110	0
15	Ganabit Elhebel West	325	170	21	12	9	113	140	21	12	9	143
16	Elshekhh Branch	524	220	118	0	41	145	185	118		41	180
17	Elkarnak East	1940	585	736	31	197	391	490	736	31	197	486
18	Ganabit Elkarnak East	1190	409	411	18	80	272	340	411	18	80	341
19	Elroda	240	73	79	0	39	49	61	79		39	61
20	Eloxour	3407	1395	779	22	282	929	1162	779	22	282	1162
21	Ganabit Elkarnak West	1393	547	373	4	104	365	456	373	4	104	456
22	Ganabit Elkarnak (1)	153	61	40	1	7	44	52	40	1	7	53
23	Ganabit Elkarnak (2)	623	228	217	2	24	152	190	217	2	24	190
24	Ganabit Elkarnak (3)	119	47	35	0	6	31	39	35		6	39
25	Eloxour Branch 1	253	48	106	0	67	32	40	106		67	40
26	Eloxour Branch 2	368	168	73	0	15	112	140	73		15	140
27	Eloxour Branch 3	249	120	28	1	14	86	103	28	1	14	103
28	Sahel Elesh	1172	310	374	152	129	207	260	374	152	129	257
29	Elzena	242	14	151	30	38	9	11	151	30	38	12
30	Eloxour Branch 4	260	112	60	0	13	75	93	60		13	94
31	Eloxour Branch 5	322	153	48	0	19	102	128	48		19	127
32	Eloxour Branch 6	123	71	0	0	5	47	59	0		5	59
33	Elsaida	330	104	59	12	86	69	85	59	12	86	88
34	Eloxour Branch 7	485	271	10	0	24	180	225	10		24	226
35	Elodesy	144	31	64	6	22	21	26	64	6	22	26
36	Elwatra	1851	364	1003	89	152	243	303	1003	89	152	304
37	Elalia	487	137	193	8	57	92	115	193	8	57	114
38	Elweliab	222	60	78	7	39	38	50	78	7	39	48
39	Syalt Bdran	101	0	71	1	29	0	0	71	1	29	0
40	Nile	623	120	135	241	47	80	100	135	241	47	100
41	Ground Water	727	110	467	5	72	73	91	467	5	72	92
42	Elklabia	94	12	60	10	4	8	10	60	10	4	10
43	Elbiadia	7	0	4	0	3	0	0	4		3	0

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 16 Jan 2001					Expected, 1 Feb 2001				
			Sugar	Wheat	Garde	Others	Fallow	Sugar	Wheat	Garde	Other	Fallow
1	Elmala	1519	492	363	99	72	493	394	363	99	72	591
2	ElIslamia - South	104	6	43	25	23	7	5	43	25	23	8
3	Sahel Elshaab	95	35	3	19	2	36	28	3	19	2	43
4	Sahel Elodisat	781	27	46	186	10	512	205	46	186	10	334
5	ElIslamia - North	1418	265	745	23	119	266	210	745	23	119	321
6	Ganabit Elbostan	425	80	205	8	53	79	62	205	8	53	97
7	Elhosha	1428	425	506	1	71	425	340	506	1	71	510
8	Elhebal Main	1193	260	515	28	129	261	211	515	28	129	310
9	Elhebal East	1212	275	533	26	106	272	220	533	26	106	327
10	Gnabit Elhebal East	701	200	270	4	34	193	158	270	4	34	235
11	Elalia New	1368	293	573	64	146	292	230	573	64	146	355
12	Elawima	307	2	196	35	73	1	2	196	35	73	1
13	Elglabia	496	80	256	28	52	80	64	256	28	52	96
14	Metawe	296	0	179	7	110	0	0	179	7	110	0
15	Ganabit Elhebel West	325	140	21	12	9	143	134	21	12	9	149
16	Elshekhh Branch	524	185	118	0	41	180	148	118		41	217
17	Elkarnak East	1940	490	736	31	197	486	394	736	31	197	582
18	Ganabit Elkarnak East	1190	340	411	18	80	341	273	411	18	80	408
19	Elroda	240	61	79	0	39	61	49	79		39	73
20	Eloxour	3407	1162	779	22	282	1162	929	779	22	282	1395
21	Ganabit Elkarnak West	1393	456	373	4	104	456	365	373	4	104	547
22	Ganabit Elkarnak (1)	153	52	40	1	7	53	42	40	1	7	63
23	Ganabit Elkarnak (2)	623	190	217	2	24	190	151	217	2	24	229
24	Ganabit Elkarnak (3)	119	39	35	0	6	39	31	35		6	47
25	Eloxour Branch 1	253	40	106	0	67	40	33	106		67	47
26	Eloxour Branch 2	368	140	73	0	15	140	112	73		15	168
27	Eloxour Branch 3	249	103	28	1	14	103	81	28	1	14	125
28	Sahel Elesh	1172	260	374	152	129	257	206	374	152	129	311
29	Elzena	242	11	151	30	38	12	10	151	30	38	13
30	Eloxour Branch 4	260	93	60	0	13	94	75	60		13	112
31	Eloxour Branch 5	322	128	48	0	19	127	102	48		19	153
32	Eloxour Branch 6	123	59	0	0	5	59	47	0		5	71
33	Elsaida	330	85	59	12	86	88	71	59	12	86	102
34	Eloxour Branch 7	485	225	10	0	24	226	179	10		24	272
35	Elodesy	144	26	64	6	22	26	20	64	6	22	32
36	Elwatta	1851	303	1003	89	152	304	245	1003	89	152	362
37	Elalia	487	115	193	8	57	114	92	193	8	57	137
38	Elweliab	222	50	78	7	39	48	40	78	7	39	58
39	Syalt Bdran	101	0	71	1	29	0	0	71	1	29	0
40	Nile	623	100	135	241	47	100	80	135	241	47	120
41	Ground Water	727	91	467	5	72	92	74	467	5	72	109
42	Elklabia	94	10	60	10	4	10	8	60	10	4	12
43	Elbiadia	7	0	4	0	3	0	0	4		3	0

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 1 Feb 2001					Expected, 16 Feb 2001				
			Sugar	Wheat	Garde	Others	Fallow	Sugar	Wheat	Garde	Other	Fallow
1	Elmala	1519	394	363	99	72	591	394	363	99	72	591
2	ElIslamia - South	104	5	43	25	23	8	5	43	25	23	8
3	Sahel Elshaab	95	28	3	19	2	43	28	3	19	2	43
4	Sahel Elodisat	781	205	46	186	10	334	205	46	186	10	334
5	ElIslamia - North	1418	210	745	23	119	321	210	745	23	119	321
6	Ganabit Elbostan	425	62	205	8	53	97	62	205	8	53	97
7	Elhosha	1428	340	506	1	71	510	340	506	1	71	510
8	Elhebal Main	1193	211	515	28	129	310	211	515	28	129	310
9	Elhebal East	1212	220	533	26	106	327	220	533	26	106	327
10	Gnabit Elhebal East	701	158	270	4	34	235	158	270	4	34	235
11	Elalia New	1368	230	573	64	146	355	230	573	64	146	355
12	Elawima	307	2	196	35	73	1	2	196	35	73	1
13	Elglabia	496	64	256	28	52	96	64	256	28	52	96
14	Metawe	296	0	179	7	110	0	0	179	7	110	0
15	Ganabit Elhebel West	325	134	21	12	9	149	134	21	12	9	149
16	Elshekhh Branch	524	148	118	0	41	217	148	118		41	217
17	Elkarnak East	1940	394	736	31	197	582	394	736	31	197	582
18	Ganabit Elkarnak East	1190	273	411	18	80	408	273	411	18	80	408
19	Elroda	240	49	79	0	39	73	49	79		39	73
20	Eloxour	3407	929	779	22	282	1395	929	779	22	282	1395
21	Ganabit Elkarnak West	1393	365	373	4	104	547	365	373	4	104	547
22	Ganabit Elkarnak (1)	153	42	40	1	7	63	42	40	1	7	63
23	Ganabit Elkarnak (2)	623	151	217	2	24	229	151	217	2	24	229
24	Ganabit Elkarnak (3)	119	31	35	0	6	47	31	35		6	47
25	Eloxour Branch 1	253	33	106	0	67	47	33	106		67	47
26	Eloxour Branch 2	368	112	73	0	15	168	112	73		15	168
27	Eloxour Branch 3	249	81	28	1	14	125	81	28	1	14	125
28	Sahel Elesh	1172	206	374	152	129	311	206	374	152	129	311
29	Elzena	242	10	151	30	38	13	10	151	30	38	13
30	Eloxour Branch 4	260	75	60	0	13	112	75	60		13	112
31	Eloxour Branch 5	322	102	48	0	19	153	102	48		19	153
32	Eloxour Branch 6	123	47	0	0	5	71	47	0		5	71
33	Elsaida	330	71	59	12	86	102	71	59	12	86	102
34	Eloxour Branch 7	485	179	10	0	24	272	179	10		24	272
35	Elodesy	144	20	64	6	22	32	20	64	6	22	32
36	Elwatra	1851	245	1003	89	152	362	245	1003	89	152	362
37	Elalia	487	92	193	8	57	137	92	193	8	57	137
38	Elweliab	222	40	78	7	39	58	40	78	7	39	58
39	Syalt Bdran	101	0	71	1	29	0	0	71	1	29	0
40	Nile	623	80	135	241	47	120	80	135	241	47	120
41	Ground Water	727	74	467	5	72	109	74	467	5	72	109
42	Elklabia	94	8	60	10	4	12	8	60	10	4	12
43	Elbiadia	7	0	4	0	3	0	0	4		3	0

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 16 Feb 2001					Expected, 1 Mar 2001				
			Sugar	Wheat	Garde	Others	Fallow	Sugar	Wheat	Garde	Other	Fallow
1	Elmala	1519	394	363	99	72	591	492	363	99	72	493
2	ElIslamia - South	104	5	43	25	23	8	6	43	25	23	7
3	Sahel Elshaab	95	28	3	19	2	43	35	3	19	2	36
4	Sahel Elodisat	781	205	46	186	10	334	270	46	186	10	269
5	ElIslamia - North	1418	210	745	23	119	321	215	745	23	119	316
6	Ganabit Elbostan	425	62	205	8	53	97	80	205	8	53	79
7	Elhosha	1428	340	506	1	71	510	425	506	1	71	425
8	Elhebal Main	1193	211	515	28	129	310	260	515	28	129	261
9	Elhebal East	1212	220	533	26	106	327	275	533	26	106	272
10	Gnabit Elhebal East	701	158	270	4	34	235	200	270	4	34	193
11	Elalia New	1368	230	573	64	146	355	293	573	64	146	292
12	Elawima	307	2	196	35	73	1	2	196	35	73	1
13	Elglabia	496	64	256	28	52	96	80	256	28	52	80
14	Metawe	296	0	179	7	110	0	0	179	7	110	0
15	Ganabit Elhebel West	325	134	21	12	9	149	140	21	12	9	143
16	Elshekhh Branch	524	148	118	0	41	217	185	118		41	180
17	Elkarnak East	1940	394	736	31	197	582	490	736	31	197	486
18	Ganabit Elkarnak East	1190	273	411	18	80	408	340	411	18	80	341
19	Elroda	240	49	79	0	39	73	61	79		39	61
20	Eloxour	3407	929	779	22	282	1395	1162	779	22	282	1162
21	Ganabit Elkarnak West	1393	365	373	4	104	547	456	373	4	104	456
22	Ganabit Elkarnak (1)	153	42	40	1	7	63	52	40	1	7	53
23	Ganabit Elkarnak (2)	623	151	217	2	24	229	190	217	2	24	190
24	Ganabit Elkarnak (3)	119	31	35	0	6	47	39	35		6	39
25	Eloxour Branch 1	253	33	106	0	67	47	40	106		67	40
26	Eloxour Branch 2	368	112	73	0	15	168	140	73		15	140
27	Eloxour Branch 3	249	81	28	1	14	125	103	28	1	14	103
28	Sahel Elesh	1172	206	374	152	129	311	260	374	152	129	257
29	Elzena	242	10	151	30	38	13	11	151	30	38	12
30	Eloxour Branch 4	260	75	60	0	13	112	93	60		13	94
31	Eloxour Branch 5	322	102	48	0	19	153	128	48		19	127
32	Eloxour Branch 6	123	47	0	0	5	71	59	0		5	59
33	Elsaida	330	71	59	12	86	102	85	59	12	86	88
34	Eloxour Branch 7	485	179	10	0	24	272	225	10		24	226
35	Elodesy	144	20	64	6	22	32	26	64	6	22	26
36	Elwatta	1851	245	1003	89	152	362	303	1003	89	152	304
37	Elalia	487	92	193	8	57	137	115	193	8	57	114
38	Elweliab	222	40	78	7	39	58	50	78	7	39	48
39	Syalt Bdran	101	0	71	1	29	0	0	71	1	29	0
40	Nile	623	80	135	241	47	120	100	135	241	47	100
41	Ground Water	727	74	467	5	72	109	91	467	5	72	92
42	Elklabia	94	8	60	10	4	12	10	60	10	4	10
43	Elbiadia	7	0	4	0	3	0	0	4		3	0

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 1 Mar 2001					Expected, 16 Mar 2001				
			Sugar	Wheat	Garde	Others	Fallow	Sugar	Wheat	Garde	Other	Fallow
1	Elmala	1519	492	363	99	72	493	590	363	99	72	395
2	ElIslamia - South	104	6	43	25	23	7	8	43	25	23	5
3	Sahel Elshaab	95	35	3	19	2	36	43	3	19	2	28
4	Sahel Elodisat	781	275	46	186	10	264	323	46	186	10	216
5	ElIslamia - North	1418	265	745	23	119	266	320	745	23	119	211
6	Ganabit Elbostan	425	80	205	8	53	79	95	205	8	53	64
7	Elhosha	1428	425	506	1	71	425	510	506	1	71	340
8	Elhebal Main	1193	260	515	28	129	261	313	515	28	129	208
9	Elhebal East	1212	275	533	26	106	272	328	533	26	106	219
10	Gnabit Elhebal East	701	200	270	4	34	193	235	270	4	34	158
11	Elalia New	1368	293	573	64	146	292	351	573	64	146	234
12	Elawima	307	2	196	35	73	1	2	196	35	73	1
13	Elglabia	496	80	256	28	52	80	96	256	28	52	64
14	Metawe	296	0	179	7	110	0	0	179	7	110	0
15	Ganabit Elhebel West	325	140	21	12	9	143	170	21	12	9	113
16	Elshekhh Branch	524	185	118	0	41	180	220	118		41	145
17	Elkarnak East	1940	490	736	31	197	486	585	736	31	197	391
18	Ganabit Elkarnak East	1190	340	411	18	80	341	409	411	18	80	272
19	Elroda	240	61	79	0	39	61	73	79		39	49
20	Eloxour	3407	1162	779	22	282	1162	1395	779	22	282	929
21	Ganabit Elkarnak West	1393	456	373	4	104	456	547	373	4	104	365
22	Ganabit Elkarnak (1)	153	52	40	1	7	53	61	40	1	7	44
23	Ganabit Elkarnak (2)	623	190	217	2	24	190	228	217	2	24	152
24	Ganabit Elkarnak (3)	119	39	35	0	6	39	47	35		6	31
25	Eloxour Branch 1	253	40	106	0	67	40	48	106		67	32
26	Eloxour Branch 2	368	140	73	0	15	140	165	73		15	115
27	Eloxour Branch 3	249	103	28	1	14	103	120	28	1	14	86
28	Sahel Elesh	1172	260	374	152	129	257	310	374	152	129	207
29	Elzena	242	11	151	30	38	12	14	151	30	38	9
30	Eloxour Branch 4	260	93	60	0	13	94	112	60		13	75
31	Eloxour Branch 5	322	128	48	0	19	127	153	48		19	102
32	Eloxour Branch 6	123	59	0	0	5	59	71	0		5	47
33	Elsaida	330	85	59	12	86	88	104	59	12	86	69
34	Eloxour Branch 7	485	225	10	0	24	226	271	10		24	180
35	Elodesy	144	26	64	6	22	26	31	64	6	22	21
36	Elwatta	1851	303	1003	89	152	304	364	1003	89	152	243
37	Elalia	487	115	193	8	57	114	137	193	8	57	92
38	Elweliab	222	50	78	7	39	48	60	78	7	39	38
39	Syalt Bdran	101	0	71	1	29	0	0	71	1	29	0
40	Nile	623	100	135	241	47	100	120	135	241	47	80
41	Ground Water	727	91	467	5	72	92	110	467	5	72	73
42	Elklabia	94	10	60	10	4	10	12	60	10	4	8
43	Elbiadia	7	0	4	0	3	0	0	4		3	0

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 16 Mar 2001					Expected, 1 Apr 2001				
			Sugar	Wheat	Garde	Others	Fallow	Sugar	Wheat	Garde	Other	Fallow
1	Elmala	1519	590	363	99	72	395	670	363	99	72	315
2	ElIslamia - South	104	8	43	25	23	5	9	43	25	23	4
3	Sahel Elshaab	95	43	3	19	2	28	50	3	19	2	21
4	Sahel Elodisat	781	323	46	186	10	216	370	46	186	10	169
5	ElIslamia - North	1418	320	745	23	119	211	370	745	23	119	161
6	Ganabit Elbostan	425	95	205	8	53	64	110	205	8	53	49
7	Elhosha	1428	510	506	1	71	340	580	506	1	71	270
8	Elhebal Main	1193	313	515	28	129	208	360	515	28	129	161
9	Elhebal East	1212	328	533	26	106	219	375	533	26	106	172
10	Gnabit Elhebal East	701	235	270	4	34	158	280	270	4	34	113
11	Elalia New	1368	351	573	64	146	234	400	573	64	146	185
12	Elawima	307	2	196	35	73	1	2	196	35	73	1
13	Elglabia	496	96	256	28	52	64	105	256	28	52	55
14	Metawe	296	0	179	7	110	0	0	179	7	110	0
15	Ganabit Elhebel West	325	170	21	12	9	113	200	21	12	9	83
16	Elshekhh Branch	524	220	118	0	41	145	250	118		41	115
17	Elkarnak East	1940	585	736	31	197	391	700	736	31	197	276
18	Ganabit Elkarnak East	1190	409	411	18	80	272	475	411	18	80	206
19	Elroda	240	73	79	0	39	49	85	79		39	37
20	Eloxour	3407	1395	779	22	282	929	1550	779	22	282	774
21	Ganabit Elkarnak West	1393	547	373	4	104	365	630	373	4	104	282
22	Ganabit Elkarnak (1)	153	61	40	1	7	44	70	40	1	7	35
23	Ganabit Elkarnak (2)	623	228	217	2	24	152	275	217	2	24	105
24	Ganabit Elkarnak (3)	119	47	35	0	6	31	50	35		6	28
25	Eloxour Branch 1	253	48	106	0	67	32	56	106		67	24
26	Eloxour Branch 2	368	165	73	0	15	115	196	73		15	84
27	Eloxour Branch 3	249	120	28	1	14	86	140	28	1	14	66
28	Sahel Elesh	1172	310	374	152	129	207	360	374	152	129	157
29	Elzena	242	14	151	30	38	9	14	151	30	38	9
30	Eloxour Branch 4	260	112	60	0	13	75	130	60		13	57
31	Eloxour Branch 5	322	153	48	0	19	102	180	48		19	75
32	Eloxour Branch 6	123	71	0	0	5	47	83	0		5	35
33	Elsaida	330	104	59	12	86	69	121	59	12	86	52
34	Eloxour Branch 7	485	271	10	0	24	180	315	10		24	136
35	Elodesy	144	31	64	6	22	21	36	64	6	22	16
36	Elwatta	1851	364	1003	89	152	243	425	1003	89	152	182
37	Elalia	487	137	193	8	57	92	160	193	8	57	69
38	Elweliab	222	60	78	7	39	38	70	78	7	39	28
39	Syalt Bdran	101	0	71	1	29	0	0	71	1	29	0
40	Nile	623	120	135	241	47	80	140	135	241	47	60
41	Ground Water	727	110	467	5	72	73	128	467	5	72	55
42	Elklabia	94	12	60	10	4	8	14	60	10	4	6
43	Elbiadia	7	0	4	0	3	0	0	4		3	0

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 1 Apr 2001					Expected, 16 Apr 2001			
			Sugar	Wheat	Garde	Others	Fallow	Sugar	Garder	Other	Fallow
1	Elmala	1519	690	363	99	72	295	788	99	72	560
2	Elslamia - South	104	9	43	25	23	4	10	25	23	46
3	Sahel Elshaab	95	50	3	19	2	21	56	19	2	18
4	Sahel Elodisat	781	375	41	186	10	169	431	186	10	154
5	Elslamia - North	1418	370	672	23	119	234	424	23	119	852
6	Ganabit Elbostan	425	110	183	8	53	71	127	8	53	237
7	Elhosha	1428	595	456	1	71	305	680	1	71	676
8	Elhebal Main	1193	360	465	28	129	211	416	28	129	620
9	Elhebal East	1212	375	490	26	106	215	437	26	106	643
10	Gnabit Elhebal East	701	280	242	4	34	141	314	4	34	349
11	Elalia New	1368	410	522	64	146	226	468	64	146	690
12	Elawima	307	2	180	35	73	17	2	35	73	197
13	Elglabia	496	115	228	28	52	73	128	28	52	288
14	Metawe	296	0	160	7	110	19	0	7	110	179
15	Ganabit Elhebel West	325	200	18	12	9	86	226	12	9	78
16	Elshekhh Branach	524	255	106	0	41	122	292	0	41	191
17	Elkarnak East	1940	700	660	31	197	352	780	31	197	932
18	Ganabit Elkarnak East	1190	475	383	18	80	234	544	18	80	548
19	Elroda	240	85	79	0	39	37	97	0	39	104
20	Eloxour	3407	1630	709	22	282	764	1859	22	282	1244
21	Ganabit Elkarnak West	1393	630	343	4	104	312	729	4	104	556
22	Ganabit Elkarnak (1)	153	70	30	1	7	45	84	1	7	61
23	Ganabit Elkarnak (2)	623	275	192	2	24	130	304	2	24	293
24	Ganabit Elkarnak (3)	119	50	30	0	6	33	62	0	6	51
25	Eloxour Branch 1	253	56	88	0	67	42	64	0	67	122
26	Eloxour Branch 2	368	196	58	0	15	99	224	0	15	129
27	Eloxour Branch 3	249	140	22	1	14	72	164	1	14	70
28	Sahel Elesh	1172	360	352	152	129	179	413	152	129	478
29	Elzena	242	14	140	30	38	20	18	30	38	156
30	Eloxour Branch 4	260	130	50	0	13	67	149	0	13	98
31	Eloxour Branch 5	322	180	40	0	19	83	204	0	19	99
32	Eloxour Branch 6	123	83	0	0	5	35	94	0	5	24
33	Elsaida	330	121	50	12	86	61	138	12	86	94
34	Eloxour Branch 7	485	315	10	0	24	136	360	0	24	101
35	Elodesy	144	36	58	6	22	22	41	6	22	75
36	Elwattia	1851	425	908	89	152	277	485	89	152	1125
37	Elalia	487	160	180	8	57	82	183	8	57	239
38	Elweliah	222	70	65	7	39	41	79	7	39	97
39	Syalt Bdran	101	0	59	1	29	12	0	1	29	71
40	Nile	623	140	120	241	47	75	160	241	47	175
41	Ground Water	727	128	423	5	72	99	146	5	72	504
42	Elklabia	94	14	50	10	4	16	16	10	4	64
43	Elbiadia	7	0	4	0	3	0	0	0	3	4

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 16 Apr 2001				Expected, 1 May 2001				
			Sugar	Garder	Others	Fallow	Sugar	Maize	Garder	Others	Fallow
1	Elmala	1519	788	99	72	560	886	18	99	58	458
2	Elslamia - South	104	10	25	23	46	11	2	25	17	49
3	Sahel Elshaab	95	56	19	2	18	63	0	19	2	11
4	Sahel Elodisat	781	431	186	10	154	485	2	186	10	98
5	Elslamia - North	1418	424	23	119	852	477	30	23	89	799
6	Ganabit Elbostan	425	127	8	53	237	143	10	8	39	225
7	Elhosha	1428	680	1	71	676	765	0	1	53	609
8	Elhebal Main	1193	416	28	129	620	468	25	28	96	576
9	Elhebal East	1212	437	26	106	643	492	26	26	79	589
10	Gnabit Elhebal East	701	314	4	34	349	353	13	4	25	306
11	Elalia New	1368	468	64	146	690	527	9	64	109	659
12	Elawima	307	2	35	73	197	2	12	35	54	204
13	Elglabia	496	128	28	52	288	144	8	28	39	277
14	Metawe	296	0	7	110	179	0	1	7	82	206
15	Ganabit Elhebel West	325	226	12	9	78	254	0	12	9	50
16	Elshekhh Branach	524	292	0	41	191	328	5	0	30	161
17	Elkarnak East	1940	780	31	197	932	878	25	31	147	859
18	Ganabit Elkarnak East	1190	544	18	80	548	613	20	18	60	479
19	Elroda	240	97	0	39	104	109	3	0	29	99
20	Eloxour	3407	1859	22	282	1244	2091	38	22	211	1045
21	Ganabit Elkarnak West	1393	729	4	104	556	820	18	4	78	473
22	Ganabit Elkarnak (1)	153	84	1	7	61	94	2	1	5	51
23	Ganabit Elkarnak (2)	623	304	2	24	293	342	10	2	18	251
24	Ganabit Elkarnak (3)	119	62	0	6	51	70	1	0	4	44
25	Eloxour Branch 1	253	64	0	67	122	72	5	0	50	126
26	Eloxour Branch 2	368	224	0	15	129	252	3	0	11	102
27	Eloxour Branch 3	249	164	1	14	70	185	1	1	10	52
28	Sahel Elesh	1172	413	152	129	478	465	18	152	96	441
29	Elzena	242	18	30	38	156	20	7	30	28	157
30	Eloxour Branch 4	260	149	0	13	98	168	3	0	9	80
31	Eloxour Branch 5	322	204	0	19	99	229	2	0	14	77
32	Eloxour Branch 6	123	94	0	5	24	106	0	0	3	14
33	Elsaida	330	138	12	86	94	155	2	12	64	97
34	Eloxour Branch 7	485	360	0	24	101	405	0	0	18	62
35	Elodesy	144	41	6	22	75	46	3	6	16	73
36	Elwattia	1851	485	89	152	1125	546	49	89	114	1053
37	Elalia	487	183	8	57	239	201	9	8	51	218
38	Elweliah	222	79	7	39	97	89	3	7	35	88
39	Syalt Bdran	101	0	1	29	71	0	3	1	26	71
40	Nile	623	160	241	47	175	180	6	241	42	154
41	Ground Water	727	146	5	72	504	164	22	5	64	472
42	Elklabia	94	16	10	4	64	18	3	10	3	60
43	Elbiadia	7	0	0	3	4	0	0	0	2	5

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 1 May 2001					Expected, 15 May 2001				
			Sugar	Maize	Garde	Others	Fallow	Sugar	Maize	Garde	Other	Fallow
1	Elmala	1519	886	18	99	58	458	985	36	99	72	327
2	ElIslamia - South	104	11	2	25	17	49	13	4	25	23	39
3	Sahel Elshaab	95	63	0	19	2	11	71	0	19	2	3
4	Sahel Elodisat	781	485	2	186	10	98	539	4	186	10	42
5	ElIslamia - North	1418	477	30	23	89	799	531	60	23	119	685
6	Ganabit Elbostan	425	143	10	8	39	225	159	10	8	53	195
7	Elhosha	1428	765	0	1	53	609	850	0	1	71	506
8	Elhebal Main	1193	468	25	28	96	576	521	50	28	129	465
9	Elhebal East	1212	492	26	26	79	589	547	52	26	106	481
10	Gnabit Elhebal East	701	353	13	4	25	306	393	26	4	34	244
11	Elalia New	1368	527	9	64	109	659	586	18	64	146	554
12	Elawima	307	2	12	35	54	204	3	24	35	73	172
13	Elglabia	496	144	8	28	39	277	160	16	28	52	240
14	Metawe	296	0	1	7	82	206	0	2	7	110	177
15	Ganabit Elhebel West	325	254	0	12	9	50	283	0	12	9	21
16	Elshekhh Branch	524	328	5	0	30	161	365	10	0	41	108
17	Elkarnak East	1940	878	25	31	147	859	976	50	31	197	686
18	Ganabit Elkarnak East	1190	613	20	18	60	479	681	40	18	80	371
19	Elroda	240	109	3	0	29	99	122	8	0	39	71
20	Eloxour	3407	2091	38	22	211	1045	2324	78	22	282	701
21	Ganabit Elkarnak West	1393	820	18	4	78	473	912	37	4	104	336
22	Ganabit Elkarnak (1)	153	94	2	1	5	51	105	4	1	7	36
23	Ganabit Elkarnak (2)	623	342	10	2	18	251	380	21	2	24	196
24	Ganabit Elkarnak (3)	119	70	1	0	4	44	78	4	0	6	31
25	Eloxour Branch 1	253	72	5	0	50	126	80	10	0	67	96
26	Eloxour Branch 2	368	252	3	0	11	102	280	7	0	15	66
27	Eloxour Branch 3	249	185	1	1	10	52	206	3	1	14	25
28	Sahel Elesh	1172	465	18	152	96	441	517	37	152	129	337
29	Elzena	242	20	7	30	28	157	23	15	30	38	136
30	Eloxour Branch 4	260	168	3	0	9	80	187	6	0	13	54
31	Eloxour Branch 5	322	229	2	0	14	77	255	5	0	19	43
32	Eloxour Branch 6	123	106	0	0	3	14	118	0	0	5	0
33	Elsaida	330	155	2	12	64	97	173	6	12	86	53
34	Eloxour Branch 7	485	405	0	0	18	62	451	1	0	24	9
35	Elodesy	144	46	3	6	16	73	52	6	6	22	58
36	Elwatta	1851	546	49	89	114	1053	607	96	89	152	907
37	Elalia	487	201	9	8	51	218	229	17	8	57	176
38	Elweliab	222	89	3	7	35	88	99	7	7	39	70
39	Syalt Bdran	101	0	3	1	26	71	0	6	1	29	65
40	Nile	623	180	6	241	42	154	201	11	241	47	123
41	Ground Water	727	164	22	5	64	472	183	44	5	72	423
42	Elklabia	94	18	3	10	3	60	20	5	10	4	55
43	Elbiadia	7	0	0	0	2	5	0	2	0	3	2

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 16 May 2001					Expected, 1 Jun 2001				
			Sugar	Maize	Garde	Others	Fallow	Sugar	Maize	Garde	Other	Fallow
1	Elmala	1519	985	36	99	72	327	985	323	99	112	0
2	ElIslamia - South	104	13	4	25	23	39	13	40	25	26	0
3	Sahel Elshaab	95	71	0	19	2	3	71	5	19	0	0
4	Sahel Elodisat	781	539	4	186	10	42	539	28	186	28	0
5	ElIslamia - North	1418	531	60	23	119	685	531	700	23	164	0
6	Ganabit Elbostan	425	159	10	8	53	195	159	220	8	38	0
7	Elhosha	1428	850	0	1	71	506	850	500	1	77	0
8	Elhebal Main	1193	521	50	28	129	465	521	470	28	174	0
9	Elhebal East	1212	547	52	26	106	481	547	555	26	84	0
10	Gnabit Elhebal East	701	393	26	4	34	244	393	275	4	29	0
11	Elalia New	1368	586	18	64	146	554	586	440	64	278	0
12	Elawima	307	3	24	35	73	172	3	167	35	102	0
13	Elglabia	496	160	16	28	52	240	160	204	28	104	0
14	Metawe	296	0	2	7	110	177	0	160	7	129	0
15	Ganabit Elhebel West	325	283	0	12	9	21	283	10	12	20	0
16	Elshekhh Branch	524	365	10	0	41	108	365	111	0	48	0
17	Elkarnak East	1940	976	50	31	197	686	976	564	31	369	0
18	Ganabit Elkarnak East	1190	681	40	18	80	371	681	211	18	280	0
19	Elroda	240	122	8	0	39	71	122	35	0	83	0
20	Eloxour	3407	2324	78	22	282	701	2324	725	22	336	0
21	Ganabit Elkarnak West	1393	912	37	4	104	336	912	240	4	237	0
22	Ganabit Elkarnak (1)	153	105	4	1	7	36	105	25	1	22	0
23	Ganabit Elkarnak (2)	623	380	21	2	24	196	380	155	2	86	0
24	Ganabit Elkarnak (3)	119	78	4	0	6	31	78	20	0	21	0
25	Eloxour Branch 1	253	80	10	0	67	96	80	111	0	62	0
26	Eloxour Branch 2	368	280	7	0	15	66	280	54	0	34	0
27	Eloxour Branch 3	249	206	3	1	14	25	206	37	1	5	0
28	Sahel Elesh	1172	517	37	152	129	337	517	245	152	258	0
29	Elzena	242	23	15	30	38	136	23	105	30	84	0
30	Eloxour Branch 4	260	187	6	0	13	54	187	20	0	53	0
31	Eloxour Branch 5	322	255	5	0	19	43	255	35	0	32	0
32	Eloxour Branch 6	123	118	0	0	5	0	118	0	0	5	0
33	Elsaida	330	173	6	12	86	53	173	86	12	59	0
34	Eloxour Branch 7	485	451	1	0	24	9	451	14	0	20	0
35	Elodesy	144	52	6	6	22	58	52	24	6	62	0
36	Elwatta	1851	607	96	89	152	907	607	605	89	550	0
37	Elalia	487	229	17	8	57	176	229	135	8	115	0
38	Elweliab	222	99	7	7	39	70	99	16	7	100	0
39	Syalt Bdran	101	0	6	1	29	65	0	76	1	24	0
40	Nile	623	201	11	241	47	123	201	81	241	100	0
41	Ground Water	727	183	44	5	72	423	183	322	5	217	0
42	Elklabia	94	20	5	10	4	55	20	63	10	1	0
43	Elbiadia	7	0	2	0	3	2	0	7	0	0	0

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 1 Jun 2001					Expected, 16 Jun 2001				
			Sugar	Maize	Garde	Others	Fallow	Sugar	Maize	Garde	Other	Fallow
1	Elmala	1519	985	323	99	112	0	985	323	99	112	0
2	ElIslamia - South	104	13	40	25	26	0	13	40	25	26	0
3	Sahel Elshaab	95	71	5	19	0	0	71	5	19	0	0
4	Sahel Elodisat	781	539	28	186	28	0	539	28	186	28	0
5	ElIslamia - North	1418	531	700	23	164	0	531	700	23	164	0
6	Ganabit Elbostan	425	159	220	8	38	0	159	220	8	38	0
7	Elhosha	1428	850	500	1	77	0	850	500	1	77	0
8	Elhebal Main	1193	521	470	28	174	0	521	470	28	174	0
9	Elhebal East	1212	547	555	26	84	0	547	555	26	84	0
10	Gnabit Elhebal East	701	393	275	4	29	0	393	275	4	29	0
11	Elalia New	1368	586	440	64	278	0	586	440	64	278	0
12	Elawima	307	3	167	35	102	0	3	167	35	102	0
13	Elglabia	496	160	204	28	104	0	160	204	28	104	0
14	Metawe	296	0	160	7	129	0	0	160	7	129	0
15	Ganabit Elhebel West	325	283	10	12	20	0	283	10	12	20	0
16	Elshekhh Branch	524	365	111	0	48	0	365	111	0	48	0
17	Elkarnak East	1940	976	564	31	369	0	976	564	31	369	0
18	Ganabit Elkarnak East	1190	681	211	18	280	0	681	211	18	280	0
19	Elroda	240	122	35	0	83	0	122	35	0	83	0
20	Eloxour	3407	2324	725	22	336	0	2324	725	22	336	0
21	Ganabit Elkarnak West	1393	912	240	4	237	0	912	240	4	237	0
22	Ganabit Elkarnak (1)	153	105	25	1	22	0	105	25	1	22	0
23	Ganabit Elkarnak (2)	623	380	155	2	86	0	380	155	2	86	0
24	Ganabit Elkarnak (3)	119	78	20	0	21	0	78	20	0	21	0
25	Eloxour Branch 1	253	80	111	0	62	0	80	111	0	62	0
26	Eloxour Branch 2	368	280	54	0	34	0	280	54	0	34	0
27	Eloxour Branch 3	249	206	37	1	5	0	206	37	1	5	0
28	Sahel Elesh	1172	517	245	152	258	0	517	245	152	258	0
29	Elzena	242	23	105	30	84	0	23	105	30	84	0
30	Eloxour Branch 4	260	187	20	0	53	0	187	20	0	53	0
31	Eloxour Branch 5	322	255	35	0	32	0	255	35	0	32	0
32	Eloxour Branch 6	123	118	0	0	5	0	118	0	0	5	0
33	Elsaida	330	173	86	12	59	0	173	86	12	59	0
34	Eloxour Branch 7	485	451	14	0	20	0	451	14	0	20	0
35	Elodesy	144	52	24	6	62	0	52	24	6	62	0
36	Elwatta	1851	607	605	89	550	0	607	605	89	550	0
37	Elalia	487	229	135	8	115	0	229	135	8	115	0
38	Elweliab	222	99	16	7	100	0	99	16	7	100	0
39	Syalt Bdran	101	0	76	1	24	0	0	76	1	24	0
40	Nile	623	201	81	241	100	0	201	81	241	100	0
41	Ground Water	727	183	322	5	217	0	183	322	5	217	0
42	Elklabia	94	20	63	10	1	0	20	63	10	1	0
43	Elbiadia	7	0	7	0	0	0	0	7	0	0	0

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 16 Jun 2001					Expected, 1 Jul 2001				
			Sugar	Maize	Garde	Others	Fallow	Sugar	Maize	Garde	Other	Fallow
1	Elmala	1519	985	323	99	112	0	985	323	99	112	0
2	ElIslamia - South	104	13	40	25	26	0	13	40	25	26	0
3	Sahel Elshaab	95	71	5	19	0	0	71	5	19	0	0
4	Sahel Elodisat	781	539	28	186	28	0	539	28	186	28	0
5	ElIslamia - North	1418	531	700	23	164	0	531	700	23	164	0
6	Ganabit Elbostan	425	159	220	8	38	0	159	220	8	38	0
7	Elhosha	1428	850	500	1	77	0	850	500	1	77	0
8	Elhebal Main	1193	521	470	28	174	0	521	470	28	174	0
9	Elhebal East	1212	547	555	26	84	0	547	555	26	84	0
10	Gnabit Elhebal East	701	393	275	4	29	0	393	275	4	29	0
11	Elalia New	1368	586	440	64	278	0	586	440	64	278	0
12	Elawima	307	3	167	35	102	0	3	167	35	102	0
13	Elglabia	496	160	204	28	104	0	160	204	28	104	0
14	Metawe	296	0	160	7	129	0	0	160	7	129	0
15	Ganabit Elhebel West	325	283	10	12	20	0	283	10	12	20	0
16	Elshekhh Branch	524	365	111	0	48	0	365	111	0	48	0
17	Elkarnak East	1940	976	564	31	369	0	976	564	31	369	0
18	Ganabit Elkarnak East	1190	681	211	18	280	0	681	211	18	280	0
19	Elroda	240	122	35	0	83	0	122	35	0	83	0
20	Eloxour	3407	2324	725	22	336	0	2324	725	22	336	0
21	Ganabit Elkarnak West	1393	912	240	4	237	0	912	240	4	237	0
22	Ganabit Elkarnak (1)	153	105	25	1	22	0	105	25	1	22	0
23	Ganabit Elkarnak (2)	623	380	155	2	86	0	380	155	2	86	0
24	Ganabit Elkarnak (3)	119	78	20	0	21	0	78	20	0	21	0
25	Eloxour Branch 1	253	80	111	0	62	0	80	111	0	62	0
26	Eloxour Branch 2	368	280	54	0	34	0	280	54	0	34	0
27	Eloxour Branch 3	249	206	37	1	5	0	206	37	1	5	0
28	Sahel Elesh	1172	517	245	152	258	0	517	245	152	258	0
29	Elzena	242	23	105	30	84	0	23	105	30	84	0
30	Eloxour Branch 4	260	187	20	0	53	0	187	20	0	53	0
31	Eloxour Branch 5	322	255	35	0	32	0	255	35	0	32	0
32	Eloxour Branch 6	123	118	0	0	5	0	118	0	0	5	0
33	Elsaida	330	173	86	12	59	0	173	86	12	59	0
34	Eloxour Branch 7	485	451	14	0	20	0	451	14	0	20	0
35	Elodesy	144	52	24	6	62	0	52	24	6	62	0
36	Elwatta	1851	607	605	89	550	0	607	605	89	550	0
37	Elalia	487	229	135	8	115	0	229	135	8	115	0
38	Elweliab	222	99	16	7	100	0	99	16	7	100	0
39	Syalt Bdran	101	0	76	1	24	0	0	76	1	24	0
40	Nile	623	201	81	241	100	0	201	81	241	100	0
41	Ground Water	727	183	322	5	217	0	183	322	5	217	0
42	Elklabia	94	20	63	10	1	0	20	63	10	1	0
43	Elbiadia	7	0	7	0	0	0	0	7	0	0	0

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 1 Jul 2001					Expected, 16 Jul 2001				
			Sugar	Maize	Garde	Others	Fallow	Sugar	Maize	Garde	Other	Fallow
1	Elmala	1519	985	323	99	112	0	985	323	99	112	0
2	ElIslamia - South	104	13	40	25	26	0	13	40	25	26	0
3	Sahel Elshaab	95	71	5	19	0	0	71	5	19	0	0
4	Sahel Elodisat	781	539	28	186	28	0	539	28	186	28	0
5	ElIslamia - North	1418	531	700	23	164	0	531	700	23	164	0
6	Ganabit Elbostan	425	159	220	8	38	0	159	220	8	38	0
7	Elhosha	1428	850	500	1	77	0	850	500	1	77	0
8	Elhebal Main	1193	521	470	28	174	0	521	470	28	174	0
9	Elhebal East	1212	547	555	26	84	0	547	555	26	84	0
10	Gnabit Elhebal East	701	393	275	4	29	0	393	275	4	29	0
11	Elalia New	1368	586	440	64	278	0	586	440	64	278	0
12	Elawima	307	3	167	35	102	0	3	167	35	102	0
13	Elglabia	496	160	204	28	104	0	160	204	28	104	0
14	Metawe	296	0	160	7	129	0	0	160	7	129	0
15	Ganabit Elhebel West	325	283	10	12	20	0	283	10	12	20	0
16	Elshekhh Branch	524	365	111	0	48	0	365	111	0	48	0
17	Elkarnak East	1940	976	564	31	369	0	976	564	31	369	0
18	Ganabit Elkarnak East	1190	681	211	18	280	0	681	211	18	280	0
19	Elroda	240	122	35	0	83	0	122	35	0	83	0
20	Eloxour	3407	2324	725	22	336	0	2324	725	22	336	0
21	Ganabit Elkarnak West	1393	912	240	4	237	0	912	240	4	237	0
22	Ganabit Elkarnak (1)	153	105	25	1	22	0	105	25	1	22	0
23	Ganabit Elkarnak (2)	623	380	155	2	86	0	380	155	2	86	0
24	Ganabit Elkarnak (3)	119	78	20	0	21	0	78	20	0	21	0
25	Eloxour Branch 1	253	80	111	0	62	0	80	111	0	62	0
26	Eloxour Branch 2	368	280	54	0	34	0	280	54	0	34	0
27	Eloxour Branch 3	249	206	37	1	5	0	206	37	1	5	0
28	Sahel Elesh	1172	517	245	152	258	0	517	245	152	258	0
29	Elzena	242	23	105	30	84	0	23	105	30	84	0
30	Eloxour Branch 4	260	187	20	0	53	0	187	20	0	53	0
31	Eloxour Branch 5	322	255	35	0	32	0	255	35	0	32	0
32	Eloxour Branch 6	123	118	0	0	5	0	118	0	0	5	0
33	Elsaida	330	173	86	12	59	0	173	86	12	59	0
34	Eloxour Branch 7	485	451	14	0	20	0	451	14	0	20	0
35	Elodesy	144	52	24	6	62	0	52	24	6	62	0
36	Elwatta	1851	607	605	89	550	0	607	605	89	550	0
37	Elalia	487	229	135	8	115	0	229	135	8	115	0
38	Elweliab	222	99	16	7	100	0	99	16	7	100	0
39	Syalt Bdran	101	0	76	1	24	0	0	76	1	24	0
40	Nile	623	201	81	241	100	0	201	81	241	100	0
41	Ground Water	727	183	322	5	217	0	183	322	5	217	0
42	Elklabia	94	20	63	10	1	0	20	63	10	1	0
43	Elbiadia	7	0	7	0	0	0	0	7	0	0	0

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 16 Jul 2001					Expected, 1 Aug 2001				
			Sugar	Maize	Garde	Others	Fallow	Sugar	Maize	Garde	Other	Fallow
1	Elmala	1519	985	323	99	112	0	985	323	99	112	0
2	ElIslamia - South	104	13	40	25	26	0	13	40	25	26	0
3	Sahel Elshaab	95	71	5	19	0	0	71	5	19	0	0
4	Sahel Elodisat	781	539	28	186	28	0	539	28	186	28	0
5	ElIslamia - North	1418	531	700	23	164	0	531	700	23	164	0
6	Ganabit Elbostan	425	159	220	8	38	0	159	220	8	38	0
7	Elhosha	1428	850	500	1	77	0	850	500	1	77	0
8	Elhebal Main	1193	521	470	28	174	0	521	470	28	174	0
9	Elhebal East	1212	547	555	26	84	0	547	555	26	84	0
10	Gnabit Elhebal East	701	393	275	4	29	0	393	275	4	29	0
11	Elalia New	1368	586	440	64	278	0	586	440	64	278	0
12	Elawima	307	3	167	35	102	0	3	167	35	102	0
13	Elglabia	496	160	204	28	104	0	160	204	28	104	0
14	Metawe	296	0	160	7	129	0	0	160	7	129	0
15	Ganabit Elhebel West	325	283	10	12	20	0	283	10	12	20	0
16	Elshekhh Branch	524	365	111	0	48	0	365	111	0	48	0
17	Elkarnak East	1940	976	564	31	369	0	976	564	31	369	0
18	Ganabit Elkarnak East	1190	681	211	18	280	0	681	211	18	280	0
19	Elroda	240	122	35	0	83	0	122	35	0	83	0
20	Eloxour	3407	2324	725	22	336	0	2324	725	22	336	0
21	Ganabit Elkarnak West	1393	912	240	4	237	0	912	240	4	237	0
22	Ganabit Elkarnak (1)	153	105	25	1	22	0	105	25	1	22	0
23	Ganabit Elkarnak (2)	623	380	155	2	86	0	380	155	2	86	0
24	Ganabit Elkarnak (3)	119	78	20	0	21	0	78	20	0	21	0
25	Eloxour Branch 1	253	80	111	0	62	0	80	111	0	62	0
26	Eloxour Branch 2	368	280	54	0	34	0	280	54	0	34	0
27	Eloxour Branch 3	249	206	37	1	5	0	206	37	1	5	0
28	Sahel Elesh	1172	517	245	152	258	0	517	245	152	258	0
29	Elzena	242	23	105	30	84	0	23	105	30	84	0
30	Eloxour Branch 4	260	187	20	0	53	0	187	20	0	53	0
31	Eloxour Branch 5	322	255	35	0	32	0	255	35	0	32	0
32	Eloxour Branch 6	123	118	0	0	5	0	118	0	0	5	0
33	Elsaida	330	173	86	12	59	0	173	86	12	59	0
34	Eloxour Branch 7	485	451	14	0	20	0	451	14	0	20	0
35	Elodesy	144	52	24	6	62	0	52	24	6	62	0
36	Elwatta	1851	607	605	89	550	0	607	605	89	550	0
37	Elalia	487	229	135	8	115	0	229	135	8	115	0
38	Elweliab	222	99	16	7	100	0	99	16	7	100	0
39	Syalt Bdran	101	0	76	1	24	0	0	76	1	24	0
40	Nile	623	201	81	241	100	0	201	81	241	100	0
41	Ground Water	727	183	322	5	217	0	183	322	5	217	0
42	Elklabia	94	20	63	10	1	0	20	63	10	1	0
43	Elbiadia	7	0	7	0	0	0	0	7	0	0	0

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 1 Aug 2001					Expected, 16 Aug 2001				
			Sugar	Maize	Garde	Others	Fallow	Sugar	Maize	Garde	Other	Fallow
1	Elmala	1519	985	323	99	112	0	985	323	99	112	0
2	ElIslamia - South	104	13	40	25	26	0	13	40	25	26	0
3	Sahel Elshaab	95	71	5	19	0	0	71	5	19	0	0
4	Sahel Elodisat	781	539	28	186	28	0	539	28	186	28	0
5	ElIslamia - North	1418	531	700	23	164	0	531	700	23	164	0
6	Ganabit Elbostan	425	159	220	8	38	0	159	220	8	38	0
7	Elhosha	1428	850	500	1	77	0	850	500	1	77	0
8	Elhebal Main	1193	521	470	28	174	0	521	470	28	174	0
9	Elhebal East	1212	547	555	26	84	0	547	555	26	84	0
10	Gnabit Elhebal East	701	393	275	4	29	0	393	275	4	29	0
11	Elalia New	1368	586	440	64	278	0	586	440	64	278	0
12	Elawima	307	3	167	35	102	0	3	167	35	102	0
13	Elglabia	496	160	204	28	104	0	160	204	28	104	0
14	Metawe	296	0	160	7	129	0	0	160	7	129	0
15	Ganabit Elhebel West	325	283	10	12	20	0	283	10	12	20	0
16	Elshekhh Branch	524	365	111	0	48	0	365	111	0	48	0
17	Elkarnak East	1940	976	564	31	369	0	976	564	31	369	0
18	Ganabit Elkarnak East	1190	681	211	18	280	0	681	211	18	280	0
19	Elroda	240	122	35	0	83	0	122	35	0	83	0
20	Eloxour	3407	2324	725	22	336	0	2324	725	22	336	0
21	Ganabit Elkarnak West	1393	912	240	4	237	0	912	240	4	237	0
22	Ganabit Elkarnak (1)	153	105	25	1	22	0	105	25	1	22	0
23	Ganabit Elkarnak (2)	623	380	155	2	86	0	380	155	2	86	0
24	Ganabit Elkarnak (3)	119	78	20	0	21	0	78	20	0	21	0
25	Eloxour Branch 1	253	80	111	0	62	0	80	111	0	62	0
26	Eloxour Branch 2	368	280	54	0	34	0	280	54	0	34	0
27	Eloxour Branch 3	249	206	37	1	5	0	206	37	1	5	0
28	Sahel Elesh	1172	517	245	152	258	0	517	245	152	258	0
29	Elzena	242	23	105	30	84	0	23	105	30	84	0
30	Eloxour Branch 4	260	187	20	0	53	0	187	20	0	53	0
31	Eloxour Branch 5	322	255	35	0	32	0	255	35	0	32	0
32	Eloxour Branch 6	123	118	0	0	5	0	118	0	0	5	0
33	Elsaida	330	173	86	12	59	0	173	86	12	59	0
34	Eloxour Branch 7	485	451	14	0	20	0	451	14	0	20	0
35	Elodesy	144	52	24	6	62	0	52	24	6	62	0
36	Elwatta	1851	607	605	89	550	0	607	605	89	550	0
37	Elalia	487	229	135	8	115	0	229	135	8	115	0
38	Elweliab	222	99	16	7	100	0	99	16	7	100	0
39	Syalt Bdran	101	0	76	1	24	0	0	76	1	24	0
40	Nile	623	201	81	241	100	0	201	81	241	100	0
41	Ground Water	727	183	322	5	217	0	183	322	5	217	0
42	Elklabia	94	20	63	10	1	0	20	63	10	1	0
43	Elbiadia	7	0	7	0	0	0	0	7	0	0	0

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 16 Aug 2001					Expected, 1 Sep 2001				
			Sugar	Maize	Garde	Others	Fallow	Sugar	Maize	Garde	Other	Fallow
1	Elmala	1519	985	323	99	112	0	985	323	99	112	0
2	ElIslamia - South	104	13	40	25	26	0	13	40	25	26	0
3	Sahel Elshaab	95	71	5	19	0	0	71	5	19	0	0
4	Sahel Elodisat	781	539	28	186	28	0	539	28	186	28	0
5	ElIslamia - North	1418	531	700	23	164	0	531	700	23	164	0
6	Ganabit Elbostan	425	159	220	8	38	0	159	220	8	38	0
7	Elhosha	1428	850	500	1	77	0	850	500	1	77	0
8	Elhebal Main	1193	521	470	28	174	0	521	470	28	174	0
9	Elhebal East	1212	547	555	26	84	0	547	555	26	84	0
10	Gnabit Elhebal East	701	393	275	4	29	0	393	275	4	29	0
11	Elalia New	1368	586	440	64	278	0	586	440	64	278	0
12	Elawima	307	3	167	35	102	0	3	167	35	102	0
13	Elglabia	496	160	204	28	104	0	160	204	28	104	0
14	Metawe	296	0	160	7	129	0	0	160	7	129	0
15	Ganabit Elhebel West	325	283	10	12	20	0	283	10	12	20	0
16	Elshekhh Branch	524	365	111	0	48	0	365	111	0	48	0
17	Elkarnak East	1940	976	564	31	369	0	976	564	31	369	0
18	Ganabit Elkarnak East	1190	681	211	18	280	0	681	211	18	280	0
19	Elroda	240	122	35	0	83	0	122	35	0	83	0
20	Eloxour	3407	2324	725	22	336	0	2324	725	22	336	0
21	Ganabit Elkarnak West	1393	912	240	4	237	0	912	240	4	237	0
22	Ganabit Elkarnak (1)	153	105	25	1	22	0	105	25	1	22	0
23	Ganabit Elkarnak (2)	623	380	155	2	86	0	380	155	2	86	0
24	Ganabit Elkarnak (3)	119	78	20	0	21	0	78	20	0	21	0
25	Eloxour Branch 1	253	80	111	0	62	0	80	111	0	62	0
26	Eloxour Branch 2	368	280	54	0	34	0	280	54	0	34	0
27	Eloxour Branch 3	249	206	37	1	5	0	206	37	1	5	0
28	Sahel Elesh	1172	517	245	152	258	0	517	245	152	258	0
29	Elzena	242	23	105	30	84	0	23	105	30	84	0
30	Eloxour Branch 4	260	187	20	0	53	0	187	20	0	53	0
31	Eloxour Branch 5	322	255	35	0	32	0	255	35	0	32	0
32	Eloxour Branch 6	123	118	0	0	5	0	118	0	0	5	0
33	Elsaida	330	173	86	12	59	0	173	86	12	59	0
34	Eloxour Branch 7	485	451	14	0	20	0	451	14	0	20	0
35	Elodesy	144	52	24	6	62	0	52	24	6	62	0
36	Elwatta	1851	607	605	89	550	0	607	605	89	550	0
37	Elalia	487	229	135	8	115	0	229	135	8	115	0
38	Elweliab	222	99	16	7	100	0	99	16	7	100	0
39	Syalt Bdran	101	0	76	1	24	0	0	76	1	24	0
40	Nile	623	201	81	241	100	0	201	81	241	100	0
41	Ground Water	727	183	322	5	217	0	183	322	5	217	0
42	Elklabia	94	20	63	10	1	0	20	63	10	1	0
43	Elbiadia	7	0	7	0	0	0	0	7	0	0	0

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 1 Sep 2001					Expected, 16 Sep 2001				
			Sugar	Maize	Garde	Others	Fallow	Sugar	Maize	Garde	Other	Fallow
1	Elmala	1519	985	323	99	112	0	985	323	99	112	0
2	ElIslamia - South	104	13	40	25	26	0	13	40	25	26	0
3	Sahel Elshaab	95	71	5	19	0	0	71	5	19	0	0
4	Sahel Elodisat	781	539	28	186	28	0	539	28	186	28	0
5	ElIslamia - North	1418	531	700	23	164	0	531	700	23	164	0
6	Ganabit Elbostan	425	159	220	8	38	0	159	220	8	38	0
7	Elhosha	1428	850	500	1	77	0	850	500	1	77	0
8	Elhebal Main	1193	521	470	28	174	0	521	470	28	174	0
9	Elhebal East	1212	547	555	26	84	0	547	555	26	84	0
10	Gnabit Elhebal East	701	393	275	4	29	0	393	275	4	29	0
11	Elalia New	1368	586	440	64	278	0	586	440	64	278	0
12	Elawima	307	3	167	35	102	0	3	167	35	102	0
13	Elglabia	496	160	204	28	104	0	160	204	28	104	0
14	Metawe	296	0	160	7	129	0	0	160	7	129	0
15	Ganabit Elhebel West	325	283	10	12	20	0	283	10	12	20	0
16	Elshekhh Branch	524	365	111	0	48	0	365	111	0	48	0
17	Elkarnak East	1940	976	564	31	369	0	976	564	31	369	0
18	Ganabit Elkarnak East	1190	681	211	18	280	0	681	211	18	280	0
19	Elroda	240	122	35	0	83	0	122	35	0	83	0
20	Eloxour	3407	2324	725	22	336	0	2324	725	22	336	0
21	Ganabit Elkarnak West	1393	912	240	4	237	0	912	240	4	237	0
22	Ganabit Elkarnak (1)	153	105	25	1	22	0	105	25	1	22	0
23	Ganabit Elkarnak (2)	623	380	155	2	86	0	380	155	2	86	0
24	Ganabit Elkarnak (3)	119	78	20	0	21	0	78	20	0	21	0
25	Eloxour Branch 1	253	80	111	0	62	0	80	111	0	62	0
26	Eloxour Branch 2	368	280	54	0	34	0	280	54	0	34	0
27	Eloxour Branch 3	249	206	37	1	5	0	206	37	1	5	0
28	Sahel Elesh	1172	517	245	152	258	0	517	245	152	258	0
29	Elzena	242	23	105	30	84	0	23	105	30	84	0
30	Eloxour Branch 4	260	187	20	0	53	0	187	20	0	53	0
31	Eloxour Branch 5	322	255	35	0	32	0	255	35	0	32	0
32	Eloxour Branch 6	123	118	0	0	5	0	118	0	0	5	0
33	Elsaida	330	173	86	12	59	0	173	86	12	59	0
34	Eloxour Branch 7	485	451	14	0	20	0	451	14	0	20	0
35	Elodesy	144	52	24	6	62	0	52	24	6	62	0
36	Elwatta	1851	607	605	89	550	0	607	605	89	550	0
37	Elalia	487	229	135	8	115	0	229	135	8	115	0
38	Elweliab	222	99	16	7	100	0	99	16	7	100	0
39	Syalt Bdran	101	0	76	1	24	0	0	76	1	24	0
40	Nile	623	201	81	241	100	0	201	81	241	100	0
41	Ground Water	727	183	322	5	217	0	183	322	5	217	0
42	Elklabia	94	20	63	10	1	0	20	63	10	1	0
43	Elbiadia	7	0	7	0	0	0	0	7	0	0	0

Table 3-1. (Continued).

No	Canal	Area (feddan)	Existing, 16 Sep 2001					Expected, 1 Oct 2001				
			Sugar	Maize	Garde	Others	Fallow	Sugar	Maize	Garde	Other	Fallow
1	Elmala	1519	985	323	99	112	0	985	323	99	112	0
2	ElIslamia - South	104	13	40	25	26	0	13	40	25	26	0
3	Sahel Elshaab	95	71	5	19	0	0	71	5	19	0	0
4	Sahel Elodisat	781	539	28	186	28	0	539	28	186	28	0
5	ElIslamia - North	1418	531	700	23	164	0	531	700	23	164	0
6	Ganabit Elbostan	425	159	220	8	38	0	159	220	8	38	0
7	Elhosha	1428	850	500	1	77	0	850	500	1	77	0
8	Elhebal Main	1193	521	470	28	174	0	521	470	28	174	0
9	Elhebal East	1212	547	555	26	84	0	547	555	26	84	0
10	Gnabit Elhebal East	701	393	275	4	29	0	393	275	4	29	0
11	Elalia New	1368	586	440	64	278	0	586	440	64	278	0
12	Elawima	307	3	167	35	102	0	3	167	35	102	0
13	Elglabia	496	160	204	28	104	0	160	204	28	104	0
14	Metawe	296	0	160	7	129	0	0	160	7	129	0
15	Ganabit Elhebel West	325	283	10	12	20	0	283	10	12	20	0
16	Elshekhh Branch	524	365	111	0	48	0	365	111	0	48	0
17	Elkarnak East	1940	976	564	31	369	0	976	564	31	369	0
18	Ganabit Elkarnak East	1190	681	211	18	280	0	681	211	18	280	0
19	Elroda	240	122	35	0	83	0	122	35	0	83	0
20	Eloxour	3407	2324	725	22	336	0	2324	725	22	336	0
21	Ganabit Elkarnak West	1393	912	240	4	237	0	912	240	4	237	0
22	Ganabit Elkarnak (1)	153	105	25	1	22	0	105	25	1	22	0
23	Ganabit Elkarnak (2)	623	380	155	2	86	0	380	155	2	86	0
24	Ganabit Elkarnak (3)	119	78	20	0	21	0	78	20	0	21	0
25	Eloxour Branch 1	253	80	111	0	62	0	80	111	0	62	0
26	Eloxour Branch 2	368	280	54	0	34	0	280	54	0	34	0
27	Eloxour Branch 3	249	206	37	1	5	0	206	37	1	5	0
28	Sahel Elesh	1172	517	245	152	258	0	517	245	152	258	0
29	Elzena	242	23	105	30	84	0	23	105	30	84	0
30	Eloxour Branch 4	260	187	20	0	53	0	187	20	0	53	0
31	Eloxour Branch 5	322	255	35	0	32	0	255	35	0	32	0
32	Eloxour Branch 6	123	118	0	0	5	0	118	0	0	5	0
33	Elsaida	330	173	86	12	59	0	173	86	12	59	0
34	Eloxour Branch 7	485	451	14	0	20	0	451	14	0	20	0
35	Elodesy	144	52	24	6	62	0	52	24	6	62	0
36	Elwatta	1851	607	605	89	550	0	607	605	89	550	0
37	Elalia	487	229	135	8	115	0	229	135	8	115	0
38	Elweliab	222	99	16	7	100	0	99	16	7	100	0
39	Syalt Bdran	101	0	76	1	24	0	0	76	1	24	0
40	Nile	623	201	81	241	100	0	201	81	241	100	0
41	Ground Water	727	183	322	5	217	0	183	322	5	217	0
42	Elklabia	94	20	63	10	1	0	20	63	10	1	0
43	Elbiadia	7	0	7	0	0	0	0	7	0	0	0

4 Crop Water Needs Microsoft Excel District-Level User's Manual

4.1 Introduction

A simple model has been developed for estimating daily average irrigation water requirements and canal discharge requirements in all branch canals within an irrigation district. Model outputs will serve three purposes. First, they will be used in forecasting regional and national irrigation water requirements. Second, they will provide detailed information to district and directorate personnel responsible for managing and monitoring branch canal releases. Third, the model will provide a mechanism for developing long-term records of cropping patterns, cropping calendars and canal water requirements.

The model will utilize MALR cropping pattern and calendar data. It is anticipated that these MALR data will be compiled semi-monthly and will have been recorded in a spreadsheet format (Excel). The model is designed to import these spreadsheets directly. Users of the model at the district level are not required to provide any inputs other than the MALR data. Additional data are needed at the time the model is installed and initialized in a particular district by a supervising engineer, but these additional inputs will not be required again in the course of normal model operations.

Computation of water requirements and canal discharge requirements for all branch canals within a district is virtually instantaneous. The resulting estimates of average daily water requirements for all branch canals can be transferred immediately to the Directorate level to be used in estimating regional irrigation water requirements. The estimates of canal discharge requirements can be used within the district to assist the District Engineer and others in management of canal operations.

4.2 Background on the Model

4.2.1 Time Intervals

The intervals of time used in the analyses are half-month periods. The length of each period will be 15 or 16 days, except for the last half of February, which will be 13 days. Periods are numbered from 1 to 24, beginning with the first half of January (Period 1) and ending with the last half of December (Period 24). The ‘current’ and ‘expected’ periods are defined with reference to the half-month interval during which the cropping survey is prepared:

- *Current* period: the half-month during which the cropping survey is compiled.
- *Expected* period: the next half month following the current period.

4.2.2 Initializing the Program

The program will be installed and periodically monitored by a Ministry level professional responsible for overseeing the use of the model. The model supervisor will need assistance from the District Engineer to develop five sets of inputs for model setup and initialization: (i) a list of the crops that dominate total rates of water use in the district (generally those that cover the largest irrigated areas); (ii) a list of all canals that need to be included in the analysis; (iii) a mapping of the linkages of these canals that indicates all connections between primary, secondary and tertiary canals; (iv) a preliminary matrix of canal rotations that

indicates which canals receive water in each rotation; and (v) the duration of each rotation and intervals between rotations.

4.3 Loading the Program

The program will have been installed as an Excel Workbook entitled *Canal Demand*. The following procedure initiates operation:

- a) load Excel
- b) go to the Directory entitled *Canal* and open the workbook titled *Canal Demand*
- c) you will be asked if you want to *Disable Macros* or *Enable Macros*. Select *Enable Macros*

Sheet 1 of the workbook should be displayed. If another sheet is displayed, select the *Sheet 1* tab on the bottom of the screen.

The Sheet 1 worksheet is used to enter the MALR input data used by the model. For routine model operation the user need only enter the areas planted in individual crops for each canal and the number of the current period. The model is then executed in two stages, using CTRL keystrokes to activate Visual Basic macros. The macros are computer programs that run in the background. The first macro uses the data in Sheet 1 to compute daily average crop water requirements associated with each canal in the district. The second macro then computes the canal discharges required to meet those crop water requirements.

The user should understand the distinction between daily average crop water requirements and canal discharge requirements. Crop water requirements associated with a given canal are the daily *average* water requirements for all irrigated areas served directly by that canal. Canal discharge requirements refer to the rates of discharge in the canal required to deliver the necessary water during the interval of time the canal is actually operated in a rotation. Canal discharge requirements will generally be greater than daily average water requirements because:

- (i) Canals operating in rotation are only carrying water for a fraction of the total rotation cycle time, so the instantaneous delivery rate during operation will necessarily be greater than average rate.
- (ii) The required discharge to some canals will include water conveyed by that canal to another canal, unrelated to the irrigated areas served directly by the primary canal.

4.4 Entering Data and Running the Program

4.4.1 Preparing the input file

The period number is entered in cell C2 of Sheet 1. The MALR crop survey data are either typed directly into the spreadsheet or copied from another spreadsheet into the Sheet 1 template. Figure 4-1 shows a template of Sheet 1 before any data entry. Figure 4-2 shows the same Sheet 1 with data entry complete.

If a file is to be copied into Sheet 1 rather than typed in directly, it must be set up with the exact data positioning shown in Figure 4-2. The data can then be loaded into Sheet 1 using the *Cut* and *Paste* keys in Excel. It should be re-emphasized that if a file is to be cut and pasted into Sheet 1, the row and column positioning of the data must coincide exactly with the format shown. The Excel workbook version of the model also requires that zeros be represented literally, *i.e.*, as the number zero, rather than as a blank.

Figure 4-1. Sheet 1

Input Spreadsheet

Period	Canal	No.	Name	Current and Expected Cropping Pattern in Abou Houmos District												Water Requirements (m^3/dy)									
				Total area	Barley	Beans	Wheat	Veget.	Garde	Cotton	Prep	Rice	Maize	Fallow	Barley	Beans	Wheat	Veget.	Garde	Cotton	Prep	Rice	Maize	Fallow	
	1 Elkamaheen	4861																							
	2 Elzarka	3584																							
	3 Elherfa	7959																							
	4 Besntway	3295																							
	5 Seaf Aideen	515																							
	6 Elahkar	420																							
	7 G. Kabeel	380																							
	8 Kafia	3709																							
	9 Elkarawy	1811																							
	10 Elgaradat	1307																							
	11 Elnakhla	1191																							
	12 Sahaly	1602																							
	13 G.sahaly	1102																							
	14 Khadra	240																							
	15 Hamdy	305																							
	16 Zawet Naem	1775																							
	17 Berket Attas	2476																							
	18 Gnady Kafazzazy	1566																							
	19 Elhamamy	3811																							
	20 Elsharkawa	1845																							
	21 Eldekhla	4235																							
	22 Elwzara	2140																							
	23 Elkenawia	8606																							
	24 Abou tahon	3105																							
	25 Elzeny	4189																							
	26 Elkasida	490																							
	27 Mahlit Keel	4159																							
	28 Koom Elbous	2350																							
	29 Sidi Azab	1690																							

Figure 4-2. Sheet 1

Import MALR spreadsheet

Period	Canal	No.	Name	Current and Expected Cropping Pattern in Abou Houmos District												Water Requirements (m^3/dy)								
				Total area	Barley	Beans	Wheat	Veget.	Garde	Cotton	Prep	Rice	Maize	Fallow	Barley	Beans	Wheat	Veget.	Garde	Cotton	Prep	Rice	Maize	Fallow
	1 Elkamaheen	4861		0	0	0	505	0	1836	0	1546	554	420	0	0	0	525	0	1836	0	1846	654	0	
	2 Elzarka	3584		0	0	0	360	55	1333	0	1040	375	421	0	0	0	381	55	1333	0	1340	475	0	
	3 Elherfa	7959		0	0	0	753	0	3006	0	2522	672	1006	0	0	0	859	0	3006	0	3022	1072	0	
	4 Besntway	3295		0	0	0	240	100	1207	0	1013	330	405	0	0	0	345	100	1207	0	1213	430	0	
	5 Seaf Aideen	515		0	0	0	55	0	195	0	166	52	47	0	0	0	55	0	195	0	196	69	0	
	6 Elahkar	420		0	0	0	32	0	159	0	145	42	42	0	0	0	44	0	159	0	160	57	0	
	7 G. Kabeel	380		0	0	0	21	0	144	0	112	41	62	0	0	0	41	0	144	0	144	51	0	
	8 Kafia	3709		0	0	0	295	23	1392	0	1199	396	404	0	0	0	399	23	1392	0	1399	496	0	
	9 Elkarawy	1811		0	0	0	162	18	677	0	581	206	167	0	0	0	194	18	677	0	681	241	0	
	10 Elgaradat	1307		0	0	0	108	28	483	0	382	152	154	0	0	0	138	28	483	0	486	172	0	
	11 Elnakhla	1191		0	0	0	82	273	347	0	270	94	125	0	0	0	273	347	0	0	349	124	0	
	12 Sahaly	1602		0	0	0	132	0	605	0	408	156	301	0	0	0	173	0	605	0	608	216	0	
	13 G.sahaly	1102		0	0	0	96	0	416	0	318	68	204	0	0	0	120	0	416	0	418	148	0	
	14 Khadra	240		0	0	0	21	0	91	0	61	32	35	0	0	0	26	0	91	0	91	32	0	
	15 Hamdy	305		0	0	0	21	0	115	0	82	21	66	0	0	0	33	0	115	0	116	41	0	
	16 Zawet Naem	1775		0	0	0	151	0	670	0	474	169	311	0	0	0	192	0	670	0	674	239	0	
	17 Berket Attas	2476		0	0	0	213	8	932	0	637	232	454	0	0	0	267	8	932	0	937	332	0	
	18 Gnady Kafazzazy	1566		0	0	0	120	183	522	0	425	152	164	0	0	0	150	183	522	0	525	186	0	
	19 Elhamamy	3811		0	0	0	151	1476	882	0	687	264	351	0	0	0	252	1476	882	0	887	314	0	
	20 Elsharkawa	1845		0	0	0	82	715	427	0	329	111	181	0	0	0	122	715	427	0	429	152	0	
	21 Eldekhla	4235		0	0	0	146	1640	980	0	685	249	535	0	0	0	281	1640	980	0	985	349	0	
	22 Elwzara	2140		0	0	0	98	829	495	0	408	97	213	0	0	0	141	829	495	0	498	177	0	
	23 Elkenawia	8606		0	0	0	622	42	3235	0	2781	855	1071	0	0	0	922	42	3235	0	3252	1155	0	
	24 Abou tahon	3105		0	0	0	272	0	1173	0	879	268	513	0	0	0	335	0	1173	0	1179	418	0	
	25 Elzeny	4189		0	0	0	352	0	1582	0	1291	332	632	0	0	0	452	0	1582	0	1591	564	0	
	26 Elkasida	490		0	0	0	31	0	185	0	152	44	78	0	0	0	53	0	185	0	186	66	0	
	27 Mahlit Keel	4159		0	0	0	249	0	1572	0	1178	465	695	0	0	0	449	0	1572	0	1578	560	0	
	28 Koom Elbous	2350		0	0	0	154	0	888	0	692	262	354	0	0	0	254	0	888	0	892	316	0	
	29 Sidi Azab	1690		0	0	0	151	0	638	0	582	138	181	0	0	0	182	0	638	0	642	228	0	

4.4.2 Calculation of Crop Water Requirements

When the input data have been entered and verified in Sheet 1, pressing **CTRL-h** (simultaneous keystrokes) will execute a macro that calculates daily average canal water requirements (m^3/day). The results will appear in the two right hand columns of Sheet 1, as illustrated in Figure 4-3. The first of these two columns (labeled *0-2 wks*) shows average crop water requirements for the current time period, the period during which the crop survey was conducted. The second column (labeled *2-4 wks*) presents forecast crop water requirements for the coming half-month period. These figures represent the daily average water requirement for those crops associated with each of the indicated canals over the half-month period.

Figure 4-3. Sheet 1

Keystroke (Ctrl-h)

Period 12		Current and Expected Cropping Pattern in Abou Houmos District												Water Requirements										
No.	Name	Total area	Current pattern						Expected pattern						(= m^3/day)									
			Barsed	Beans	Wheat	Veget	Garde	Cotton	Prep	Rice	Maize	Fallow	Barsed	Beans	Wheat	Veget	Garde	Cotton	Prep	Rice	Maize	Fallow	0 - 2 wks	2 - 4 wks
1	Elkamaheen	4861	0	0	0	505	0	1836	0	1546	554	420	0	0	0	525	0	1836	0	1846	654	0	141999	158794
2	Elzarka	3584	0	0	0	360	55	1333	0	1040	375	421	0	0	0	381	55	1333	0	1340	475	0	100474	116965
3	Etherfa	7959	0	0	0	753	0	3006	0	2522	672	1006	0	0	0	859	0	3006	0	3022	1072	0	226131	257772
4	Besntway	3295	0	0	0	240	100	1207	0	1013	330	405	0	0	0	345	100	1207	0	1213	430	0	91978	106120
5	Seaf Aldeen	515	0	0	0	55	0	195	0	166	52	47	0	0	0	55	0	195	0	196	69	0	15179	16751
6	Elahkar	420	0	0	0	32	0	159	0	145	42	42	0	0	0	44	0	159	0	160	57	0	12410	13611
7	G. Kabeel	380	0	0	0	21	0	144	0	112	41	62	0	0	0	41	0	144	0	144	51	0	10026	12521
8	Kafka	3709	0	0	0	295	23	1392	0	1199	396	404	0	0	0	399	23	1392	0	1399	496	0	107330	121289
9	Elkarawy	1811	0	0	0	162	18	677	0	581	206	167	0	0	0	194	18	677	0	681	241	0	52788	59011
10	Elgaradat	1307	0	0	0	108	28	483	0	382	152	154	0	0	0	138	28	483	0	486	172	0	36629	42749
11	Elnakhlia	1191	0	0	0	82	273	347	0	270	94	125	0	0	0	98	273	347	0	349	124	0	32670	37065
12	Sahaly	1602	0	0	0	132	0	605	0	408	156	301	0	0	0	173	0	605	0	608	216	0	41185	52650
13	G.sahaly	1102	0	0	0	96	0	416	0	318	68	204	0	0	0	120	0	416	0	418	148	0	29359	35599
14	Khadra	240	0	0	0	21	0	91	0	61	32	35	0	0	0	26	0	91	0	91	32	0	6353	7982
15	Hamdy	305	0	0	0	21	0	115	0	82	21	66	0	0	0	33	0	115	0	116	41	0	7776	9940
16	Zawet Naem	1775	0	0	0	151	0	670	0	474	169	311	0	0	0	192	0	670	0	674	239	0	46515	58172
17	Berket Altas	2476	0	0	0	213	8	932	0	637	232	454	0	0	0	267	8	932	0	937	332	0	64068	81190
18	Gnady Kafrazzazy	1566	0	0	0	120	183	522	0	425	152	164	0	0	0	150	183	522	0	525	186	0	44295	50070
19	Elihammy	3811	0	0	0	151	1476	882	0	687	264	351	0	0	0	252	1476	882	0	887	314	0	101312	113833
20	Eisharkawa	1845	0	0	0	82	715	427	0	329	111	181	0	0	0	122	715	427	0	429	152	0	48841	54949
21	Eidekhla	4235	0	0	0	146	1640	980	0	685	249	535	0	0	0	281	1640	980	0	985	349	0	107899	126493
22	Eiwzara	2140	0	0	0	98	829	495	0	408	97	213	0	0	0	141	829	495	0	498	177	0	57281	63296
23	Eikenawia	8606	0	0	0	622	42	3235	0	2781	855	1071	0	0	0	922	42	3235	0	3252	1155	0	244819	279348
24	Abou tahan	3105	0	0	0	272	0	1173	0	879	268	513	0	0	0	335	0	1173	0	1179	418	0	83341	101223
25	Eizzeny	4189	0	0	0	352	0	1582	0	1291	332	632	0	0	0	452	0	1582	0	1591	564	0	115913	136566
26	Elksasida	490	0	0	0	31	0	185	0	152	44	78	0	0	0	53	0	185	0	186	66	0	13513	15935
27	Mahlt Keel	4159	0	0	0	249	0	1572	0	1178	465	695	0	0	0	449	0	1572	0	1578	560	0	110570	136550
28	Koont Elious	2350	0	0	0	154	0	888	0	692	262	354	0	0	0	254	0	888	0	892	316	0	63959	77019
29	Sidi Azab	1690	0	0	0	151	0	638	0	582	138	181	0	0	0	182	0	638	0	642	228	0	49728	54435

4.4.3 Calculation of Canal Releases

Pressing **CTRL-c** will execute a second macro that computes the canal discharge rates needed to meet the calculated crop water requirements. The outputs of this calculation are presented in Sheet 4, as illustrated in Figure 4-4. These outputs include the following:

- Average crop water requirements (Column O): These outputs, which duplicate the last column of Sheet 1, are repeated in Sheet 4 for convenient viewing. They represent estimated average daily crop water requirements for the next time period following the current period. The calculated crop water requirements are for those irrigated areas directly served by each individual canal. They do not include water conveyed through to other canals.

- b) Combined flows in rotation (Columns Q – S): These are the actual canal discharge rates (m^3/dy) that will be required during each of the rotation intervals of the next half-month period. They include water to be delivered to irrigated areas on the given canal, as well as any additional water that will be conveyed through to other canals.
- c) District totals (Last row of the spread sheet following the list of all canals): Column O in this row shows the total of daily average crop water requirements for all irrigated areas served by the entire list of canals. Columns Q – S show total delivery rates required from the primary source for the entire district during each of the rotation intervals. (Note that the outputs in Columns Q through S are *not* simply the sums of the canal deliveries shown in the preceding rows since some of the preceding canal deliveries are duplicated when water is passed through one canal to another.)

Figure 4-4. Sheet 4

Analysis of operational releases (CTRL-C) (in rotations)

Number of rotations		3	Analysis of total canal flows in rotation: 2 week projection												
Number of days per rotation		5										Individual	Combined Flows (m^3/dy)		
Canal No	Name	Linkages					Rotation			flows (m^3/dy)	(in rotation)				
		1	2	3	4	5	1	2	3		1	2	3		
1	Elkamaheen	1	0	0	0	0	1	0	0	158794	476382	0	0		
2	Elzarka	2	0	0	0	0	0	0	1	116965	87816	0	669256		
3	Elherfa	3	0	0	0	0	1	0	0	257772	773316	0	0		
4	Besntway	2	4	0	0	0	0	0	1	106120	37564	0	318361		
5	Seaf Aldeen	2	5	0	0	0	1	0	0	16751	50252	0	0		
6	Elahkar	6	0	0	0	0	1	0	0	13611	40832	0	0		
7	G. Kabeel	2	4	7	0	0	1	0	0	12521	37564	0	0		
8	Kafka	8	0	0	0	0	0	1	0	121289	0	363866	0		
9	Elkarawy	9	0	0	0	0	0	0	1	59011	0	0	177034		
10	Elgaradat	10	0	0	0	0	0	0	1	42749	0	0	128248		
11	Elnakhlia	11	0	0	0	0	0	1	0	37065	0	111196	0		
12	Sahaly	12	0	0	0	0	0	1	0	52650	0	157949	0		
13	G.sahaly	13	0	0	0	0	1	0	0	35599	106797	0	0		
14	Khadra	14	0	0	0	0	1	0	0	7982	23946	0	0		
15	Hamdy	15	0	0	0	0	1	0	0	9940	29821	0	0		
16	Zawet Naem	16	0	0	0	0	1	0	0	58172	174516	0	0		
17	Berket Attas	17	0	0	0	0	0	1	0	81190	0	243569	0		
18	Gnady Kaffazzazy	18	0	0	0	0	0	1	0	50070	0	150211	0		
19	Elhamamy	19	0	0	0	0	0	1	0	113833	0	341499	0		
20	Elsharkawa	20	0	0	0	0	0	1	0	54949	0	164848	0		
21	Eldekhla	21	0	0	0	0	0	1	0	126493	0	379479	0		
22	Elwzara	22	0	0	0	0	0	0	1	63296	0	0	189887		
23	Elkenawia	23	0	0	0	0	0	0	1	0	0	0	838044		
24	Abou tahon	24	0	0	0	0	0	0	1	101223	0	0	303668		
25	Elzemy	25	0	0	0	0	1	0	0	135656	406969	0	0		
26	Elkasida	26	0	0	0	0	0	1	0	15935	0	47806	0		
27	Mahlt Keel	27	0	0	0	0	0	0	1	136550	0	0	409649		
28	Koom Elbous	28	0	0	0	0	0	1	0	77019	0	231058	0		
29	Sidi Azab	29	0	0	0	0	0	0	1	54435	0	0	163304		

4.4.4 Other Outputs

The user can view a one-year history of cropping and planting data for any single canal in Sheet 2. Type the canal number in cell B5 of Sheet 2 and execute the **CTRL-h** macro command¹. Sheet 2 displays a history of *Current* and *Expected* crop areas and the calculated

¹ If several canals are to be viewed the canal number can be changed and CTRL-h execution repeated as many times as desired. Repeating the program execution does not have any adverse effects on the analysis.

area planted in each time period for the most recent 24 time periods. The time period associated with each line of data is indicated in Column 2. The oldest data appear as the first row, and more recent data in succeeding rows. The most recent data appear in the last row of the sheet.

Figure 4-5 illustrates a one-year history display for canal 1. The most recent period of data is Period 6. Note that the first eighteen lines of data, which represent Periods 7 through 24, are from the preceding calendar year. The next 6 lines of data show periods 1 through 6 of the current year.

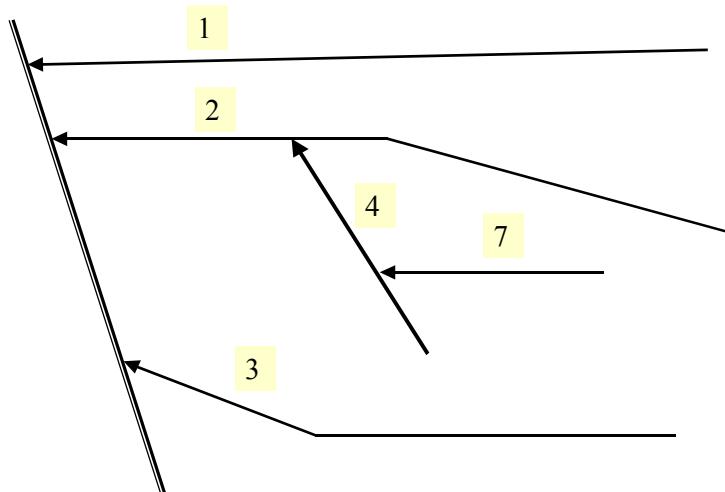
The user also has the option of viewing a one-year history of estimated daily average water requirements on Sheet 9 (illustrated in Figure 4-6). Sheet 9 presents a 24 period calendar-year history, with the most recent data appearing in the column corresponding to the most recent data period. Columns to the right of the current period number then represent data from the previous calendar year while columns to the left present current year data.

4.4.5 Setting up Canal Linkages and Rotation Information

The canal linkage information required by the model includes a numerical ‘virtual-map’ of the canal pathway by which water is delivered from the primary source to individual canals. All canals need to be assigned an identifying number during model setup. The numerical pathway indicates the sequence of canal numbers through which water will be delivered to a given canal. Such a map is indicated in Figure 4-7. In this example, the pathway to canal 1 is simply the number ‘1’. Likewise the pathway to canal 2 is just ‘2’. However canal 4 receives water through canal 2, so its pathway would be ‘2,4’. Similarly the pathway to canal 7 would be ‘2,4,7’.

Figure 4-7

Mapping of canals: an example



Note: Arrows are directed opposite to water flow while pathway numbers are sequenced in the direction of water flow.

Figure 4-5: Sample history spreadsheet (Sheet 2) for Canal 1

Figure 4-6: Summary of calculated crop water requirements (Sheet 9)

5 Crop Water Needs Microsoft Excel Model Administrator User's Manual

5.1 Introduction

The Model Administrator is assumed to be a person at the Ministry level with responsibility for insuring the integrity and correct use of the model. This implies responsibility for installing the model and configuring it for use in each district. The process of configuring the model will involve installing the Excel workbook on the District computer, assisting the District Engineer with setting up spreadsheet templates with the district name and appropriate crop and canal names in the several worksheets of the model, and determining the fixed input data to be loaded into Sheets 3 and 4. The entire Chapter 4 should be included together with this Chapter 5 to make a complete Model Administrator User's Manual.

5.2 Installing the Program

An original copy of the program is provided in the Excel file entitled *Canal Demand* on the floppy disks that accompany this report. The model is configured to operate from a directory on the C drive labeled *Canal*. Installing the program involves creating a directory with that name (*Canal*) on the district computer, then loading the program file (*Canal Demand*) into that directory.

The master copy of the program is comprised of spreadsheets built for the Abou Hummus District, along with three macros that run in the background of the spreadsheets. Canal names and crop names shown on all worksheets are for the Abou Hummus district. The fixed input data on Sheet 3 are also specifically for that district. Installing the model for another district therefore involves editing these spreadsheets to supply new crop and canal names and the additional fixed data for the new district. The various spreadsheets are protected and cannot be edited until the spreadsheet protection has been disabled.

Installing the program for another (different than Abou Hummus) district will therefore involve the following steps:

1. Create a program directory – Create a new directory entitled *Canal* on the C drive.
2. Import the program workbook – Copy the entire floppy disk (entitled *Canal Demand*) into the new directory. Files on this disk include the program itself and a set of files for the sample application of the model in the Abou Hummus district. The Abou Hummus sample files include a set of input data for 24 time periods and three history files.
3. Activate Excel and open the file entitled *Canal Demand* – After opening the workbook verify that Sheet 1 is displayed. If not, select the Sheet 1 tab at the bottom of the current spreadsheet.
4. Disable spreadsheet protection for Sheet 1 – To do this, select the tabs for *Tools*, *Protection* and *Unprotect Worksheet*. It is then possible to fill in the column and row headers (crop and canal names and canal numbers).
5. Establish a crop list – Select a list of up to nine primary crops for the district and enter the names of those crops as column headings. A tenth column is to be identified as *Fallow*. The list of crops should include those that cover the largest areas of land and therefore consume the greatest volume of water. Miscellaneous other crops that cover only small areas of land may be lumped together under the

generic heading of *Other*. The input spreadsheet (Sheet 1) should be set up from the outset to include all principal crops, not only those grown at the time the program is set up but also any others likely to be grown at any time during the entire year.

6. Replace the district name – The district name appearing at the top of Sheet 1 can be over-written.
7. Determine the number of canals – The various canals need to be arranged in the desired order, numbered accordingly and entered into the spreadsheet.
8. Set up fixed input data – The crop, weather and canal configuration data specific to the irrigation district and the list of crops, according to the positions shown in Figures 4-4 and 5-1. Details for determining these inputs are discussed further in sections 5.4 and 5.7.
9. Enter the canal linkage and rotation information – The logic of pathways was described earlier in Chapter 4. A more detailed discussion is presented in section 5.4.
10. Re-enable worksheet protection – Select tabs: *Tools*, *Protection*, and *Protect Worksheet*. Note that those cells that will be changed in the course of routine data entry and computation are not protected even when the rest of the worksheet is protected².
11. Copy the worksheet headings from Sheet 1 to other Sheets – Sheets 2, 4, 5, and 9 will need to be set up with the same canal names and crop headings. To do this, disable protection for each of those sheets, then copy and paste the column and row headings as appropriate. Then re-enable spreadsheet protection for each.

5.3 Initializing the History Files

In addition to the spreadsheets in the program workbook, the model also generates and continuously updates a set of exportable history files that can be imported to an Excel spreadsheet. These files are the *Current*, *Expected*, and *Planting* history files. They need to be created prior to the first running of the model, *i.e.*, when the CanalDemand workbook is opened for the first time for a new district. The initialization procedure is detailed in item 1 below. However the user should be warned that this procedure will setup entirely blank files by writing a zero in every data location. Since that will erase any pre-existing history data, two safeguards are included to prevent the inadvertent destruction of these files:

1. Initiation of the procedure cannot be done by keystroke. It requires the following sequence of steps:
 - a. With the workbook open, select *Tools*.
 - b. Select *Macro*.
 - c. Select *Macros* again.
 - d. Pick the macro name *InitializeHistoryFiles*.
 - e. Select *Run*.
2. Upon completion of a model run with new data, the history files will have been updated. It is recommended that they then be backed up by copying them to a separate directory.

² Enabling or disabling protection for individual cells within a worksheet is controlled by the cell format. Select the *Format*, *Cells*, and *Protection* tabs. Under the *Protection* tab is a check box entitled *Locked*. When that box is checked the individual cell will be protected whenever the sheet is protected. If the *Locked* check is removed the cell will not be protected even when the worksheet is.

Once the blank history files have been created it may be wise to begin the process of backfilling the history files with synthetic cropping pattern data for earlier periods. The synthetic data would serve to establish estimated planting dates for crops that were planted before the MALR cropping surveys were initiated. The reason would be to minimize errors in estimates of crop water requirements for the first few months after initiation of the model. Model estimates of crop water use depend upon the stage of growth of the various crops. Stage of growth in turn depends upon the dates when the crops were planted. When initializing a history file, all crop area data prior to the first data entry will be zero. The program will interpret the transition from zero feddan to non-zero crop areas (the first data entries) as the planting dates for all currently active crops. Consequently, initial estimates of crop water use for all currently irrigated crops would be low, reflecting the low rate of water use expected in the early stages of crop development. These initial estimates will be low even if the crops have actually reached full development. By estimating the planting dates for all active crops, then backfilling the history files to those dates using synthetic data the model will use the estimated planting dates as the start of the season. The synthetic data might simply be the first actual data set, but repeated for all periods back to the estimated time of planting.

5.4 Setting up the Fixed Input Data

Fixed input data are those that will be specific to the irrigation district, the region or the crop varieties, and will not change from one time period to another in the course of normal model operations. In general, they should only change when new circumstances arise, such as the introduction of a new dominant crop, or when improved data are available, such as new estimates of reference ET, better rainfall data, or better estimates of application or canal efficiencies. The fixed data include:

- Crop coefficients
- A table of ‘other water requirements’
- Historical ET_0 , the reference evapotranspiration
- Historical rainfall
- The length of time (number of days) in each time period
- Estimated application and canal efficiencies
- Canal linkages and rotations

Procedures for determining fixed input data are presented in section 5-7, *Estimating Fixed Input Data*.

The rules for establishing the pseudo map of canal linkages are explained with reference to Figure 4-7, which shows canals 1, 2 and 3 branching from a main canal, and canals 4 and 7 as tributary to canal 2. With regard to linkages between canals, this report uses the word ‘rank’ to describe where a canal fits in the hierarchy of canal linkages. It is assumed that there is a single primary source of water for the district. Generally this will be a single main canal. A Rank 1 canal receives water directly from that primary source. A Rank 2 canal is one that receives water from a Rank 1 canal, and does not connect directly to the primary source. A Rank 3 canal receives water from a Rank 2 canal, and so on. Some districts receive water from 2 or more main canals. In that case the model logic requires that those main canals be included in the analysis as Rank 1 canals, and all canals connecting directly to them are then Rank 2 canals. As presently configured, the model allows up to five ranks.

Fixed input data are stored in Sheets 3 and 4 (see Figures 5-1 and 4-4). The exact positioning of each of the data in these worksheets is critical, since the macros that depend on the data use row and column numbers to locate them. If the data are entered in a wrong location

model estimates will be incorrect, though such errors may not be apparent to the user. If for any reason the data need to be relocated in the worksheets the Visual Basic macros will need to be edited accordingly.

Because of the importance of preserving the integrity of these particular data, Sheet 3 is password protected. At the time of this program the password has been set as EPIQ. Sheet 4 is protected without a password because the district level user may need to consider changes in the schedule of rotations.

Additionally, it is recommended that a set of test data be set up for each location that can be run periodically to verify correct model operation. The correct values of model outputs can be verified once by hand for these test data, then the results can be used indefinitely to verify model performance.

5.5 Viewing the History Files

As noted earlier, the model provides for display of the three parameter histories for each canal designated by the user. The complete, off-line history files store these data for all canals on a continuing basis. They are Excel compatible, and can be viewed using the following procedure:

1. Open a new Excel worksheet in a new workbook.
2. Pick *File*.
3. Pick *Open*.
4. Go to the *C* drive, the *Canal* directory.
5. Under *Files of Type*: pick *All Files*.
6. Select the file of interest (*Current, Expected, or Planting*).
7. The *Text Import Wizard* will appear.
8. Pick *Delimited* data and go to *Next*.
9. Select the *Commas* delimiter type and go to *Next*.
10. Go to *Finish*.

The spreadsheet will then display the file. Note however, that these data are unlabeled. Data sets for the individual canals are separated by a line indicating the next canal number, but no crop headers, numbers of the time periods or canal names or numbers are shown. The user may choose to edit the newly created Excel files to add these labels.

5.6 Archiving the History Files

The history files record the data for one year, at the end of which time they begin to write over previous data. It is therefore suggested that the backup files be tagged and stored each year and new backup files created. The logical time to archive the history files will be at the end of the calendar year, that is, after data have been entered for period 24. At that point all data will be historical data for the current year. The *Expected* cropping pattern represents a forecast for the first period of the coming year, but it is only a forecast, and not historical in the same sense as the observed cropping areas represented by the *Current* and *Planting* data files.

Figure 5-1: Spreadsheet for fixed inputs (Sheet 3)

5.7 Estimating Fixed Input Data

Table A-1. FAO CLIMWAT weather data sites.

Country: EGYPT		Country Code: EGY		
No.	Station Name	Altitude	Latitude	Longitude
1	Alexandria	32 m	31.22 N.L.	29.57 E.L.
2	Aswan	200 m	24.02 N.L.	32.53 E.L.
3	Asyut	70 m	27.03 N.L.	31.01 E.L.
4	Bahariya	20 m	28.20 N.L.	28.54 E.L.
5	Baitim	2 m	31.33 N.L.	31.06 E.L.
6	Beni Suef	28 m	29.04 N.L.	31.06 E.L.
7	Bilbeis	20 m	30.24 N.L.	31.35 E.L.
8	Borg El Arab	20 m	30.54 N.L.	29.33 E.L.
9	Dabaa	18 m	30.56 N.L.	28.28 E.L.
10	Dakhla	111 m	25.29 N.L.	29.00 E.L.
11	Gemmeiza	20 m	30.43 N.L.	31.07 E.L.
12	Giza	19 m	30.03 N.L.	31.13 E.L.
13	Helwan	141 m	29.52 N.L.	31.20 E.L.
14	Ismailia	20 m	30.35 N.L.	31.26 E.L.
15	Kharga	73 m	25.27 N.L.	30.32 E.L.
16	Kom Ombo	102 m	24.29 N.L.	32.56 E.L.
17	Mallawi	20 m	27.42 N.L.	30.45 E.L.
18	Mansoura	30 m	31.03 N.L.	31.23 E.L.
19	Mersa Matruh	30 m	31.20 N.L.	27.13 E.L.
20	Minya	40 m	28.05 N.L.	30.44 E.L.
21	Port Said	6 m	31.17 N.L.	32.18 E.L.
22	Sakha	20 m	31.07 N.L.	30.57 E.L.
23	Salloum	6 m	31.32 N.L.	25.11 E.L.
24	Shandaweelel	60 m	26.26 N.L.	31.38 E.L.
25	Sidi Barrani	23 m	31.38 N.L.	25.58 E.L.
26	Siwa	-13 m	29.12 N.L.	25.29 E.L.
27	Sohag	61 m	26.34 N.L.	31.42 E.L.
28	Tahrir	20 m	30.39 N.L.	30.42 E.L.

6 Crop Water Needs Microsoft Excel District Calculation Results

6.1 Introduction

During the period June – August 2001, Dr. Marshall English, an expatriate irrigation-scheduling specialist on TDY assignment with EPIQ, developed a Microsoft Excel spreadsheet (also called an operational tool herein) for use in the irrigation district office. This spreadsheet uses the cropping pattern information transferred from MALR to calculate the real-time crop water needs for both the “current” and “expected” half-month time periods. Details of the spreadsheet development are given in APRP Water Policy Program Report No. 45, (December 2001), Appendix C, which is the TDY report of Dr. English.

Another spreadsheet and associated suite of graphs was developed for analyzing results of the operational tool that calculates water needs. See section 6.4 for detailed description, explanation, and presentation of results of this spreadsheet. This chapter gives results of use of these tools in the Luxor Irrigation District. It incorporates a comparison of crop water needs and water delivered on a district-wide basis. The water delivered to the district was obtained from the water-monitoring program conducted in the Luxor Irrigation District.

For the Luxor Irrigation District as one of the five pilot districts of the MISD benchmark, calculations were made for the whole period of cropping pattern and water delivery information collected during the benchmark activities, from March 1, 2000 through September 30, 2001 (Cropping pattern information collection began May 16, 2000.).

6.2 Crop K_c Values

Use of the operational tool for an irrigation district in Egypt requires setup procedures including determination of proper crop coefficients (K_c values) for the crops grown in the district. Table 6-1 gives crop coefficients developed for the major crops grown in Egypt consistent with the MISD cropping pattern information collection program. The FAO parameters ($K_{c\text{-ini}}$, $K_{c\text{-mid}}$, $K_{c\text{-end}}$, L_{ini} , L_{dev} , L_{mid} , and L_{late}) taken from FAO 56 were used in a Microsoft Excel spreadsheet to calculate the crop coefficients. As new districts are added to the program, these coefficients should be carefully reviewed to ensure that the values are appropriate especially for the mix of crops reported in the *Other* category, *i.e.*, other than major crops and for any crops added as major crops that are not listed in Table 6-1.

6.3 Minimum Irrigation Depth

Depending primarily on the method of irrigation used for the land within the district and possibly the crop, there is a certain minimum depth of water that can be applied during an irrigation. For instance, a farmer must have enough water to spread over the whole basin for the level-basin application method of irrigation. The calculation scheme of the operational tool developed by Dr. Marshall English and detailed in Appendix C (Report 45) was modified to allow incorporation of this concept of minimum irrigation depth. Table 6-2 shows the modified macro statement used for the results of this report. Values of minimum irrigation depth are input into the operational tool on Sheet 3, Cells A32 through I32, for each crop.

Table 6-1. Crop coefficients (K_c values) for use in Egypt in the crop water needs calculation spreadsheet (operational tool) using the MISD cropping pattern information.

Period	Maize	Bersseem (long)	Bersseem (short)	Beans	Wheat	¹ Vegetables	² Garden	Cotton	Rice	Short Dur	Sugar Cane	Sesame	Sunflower	³ Other
1	0.29	0.21	0.21	0.27	0.37	0.82	0.90	0.27	0.56	0.56	0.60	0.21	0.21	0.79
2	0.56	0.45	0.45	0.50	0.70	0.82	0.90	0.50	1.05	1.05	0.60	0.41	0.41	0.79
3	0.79	0.72	0.72	0.50	0.79	0.82	0.90	0.53	1.06	1.09	0.64	0.66	0.73	0.79
4	1.10	0.90	0.90	0.50	0.91	0.82	0.90	0.72	1.13	1.17	0.75	1.00	1.11	0.79
5	1.20	0.90	0.90	0.51	1.04	0.82	0.90	0.93	1.19	1.20	0.86	1.10	1.15	0.79
6	1.20	0.90	0.72	0.70	1.14	0.82	0.90	1.14	1.20	1.20	0.99	1.10	1.05	0.79
7	1.13	0.90		0.98	1.15	0.82	0.90	1.20	1.20	1.20	1.11	1.00	0.46	0.79
8	0.75	0.90		1.15	1.15	0.82	0.90	1.20	1.20	1.11	1.23	0.39		0.79
9	0.07	0.90		1.15	1.15	0.82	0.90	1.20	1.18	0.44	1.25			0.79
10		0.90		0.89	1.14	0.82	0.90	1.18	1.04		1.25			0.79
11		0.90		0.20	0.88	0.82	0.90	1.05	0.43		1.25			0.79
12		0.90		0.43	0.43	0.82	0.90	0.92			1.25			0.79
13		0.90				0.82	0.90	0.54			1.25			0.79
14		0.12				0.82	0.90				1.25			0.79
15						0.82	0.90				1.25			0.79
16						0.82	0.90				1.25			0.79
17						0.82	0.90				1.25			0.79
18						0.82	0.90				1.25			0.79
19						0.82	0.90				1.25			0.79
20						0.82	0.90				1.25			0.79
21						0.82	0.90				1.17			0.79
22						0.82	0.90				1.01			0.79
23						0.82	0.90				0.85			0.79
24						0.82	0.90				0.68			0.79

¹Because some districts report vegetables all year, this column uses the seasonal average of 26 vegetable crops of FAO 56

²As used by Marshall English

³Estimated (to cover all 24 periods) as approximate average of crops in this table other than sugar cane, rice, and vegetables

Table 6-2. The modified macro statement used for the results of this chapter.

```

Sub RecordHist()
'
' RecordHist Macro
'
' Macro recorded 7/13/2001 by Marshall English and modified by Larry King 10/8/2001
'
' Keyboard Shortcut: Ctrl+h
'
'This routine inputs a cropping pattern worksheet (sheet 1)and uses it for the following:
' (a) updates the history files for current (weeks 0-2) and forecast (weeks 2-4) cropping patterns, planting
' history for the current period (assumed to be planted during weeks 0 - 2)
' (b) calculates weighted averages of crop coefficients for each crop on each canal, for the current (weeks 0-2)
' and forecast (weeks 2-4) periods
' (c) calculates weighted average water duty, by canal, for each crop
' (d) calculates total water delivery required for each canal for the near-term (weeks 0-2) and longer term
' (weeks 2-4)
' (e) displays current and expected cropping patterns and current planting schedule for all crops for any chosen
' canal for the current period (period for which computation is in progress (sheet 2)
' (f) displays wheighted average crop coefficients and water duties for all crops on all canals for the current and
' expected cropping patterns (sheet 5)
'
'#####
'#####      Update external files of current and expected crop areas and current and expected planting   #####
'

Dim current(24, 13, 60), expected(24, 13, 60), planting(24, 13, 60), Kc(0 To 23, 9), KcAvg(60, 9), ExpPlant(24,
13, 60), Flag(9), OCwr(0 To 23, 9), SumOCwr(60, 9)
NCanals = Worksheets("Sheet3").Cells(33, 12)
Open "c:\canal\current" For Input As #1
Open "c:\canal\expected" For Input As #2
For cl = 1 To NCanals
    Line Input #1, canal
For p = 1 To 24
    Input #1, current(p, 4, cl), current(p, 5, cl), current(p, 6, cl), current(p, 7, cl), current(p, 8, cl), current(p, 9, cl),
    current(p, 10, cl), current(p, 11, cl), current(p, 12, cl), current(p, 13, cl)
Next p
Next cl
For cl = 1 To NCanals
    Line Input #2, canal
For p = 1 To 24
    Input #2, expected(p, 4, cl), expected(p, 5, cl), expected(p, 6, cl), expected(p, 7, cl), expected(p, 8, cl),
    expected(p, 9, cl), expected(p, 10, cl), expected(p, 11, cl), expected(p, 12, cl), expected(p, 13, cl)

Next p
Next cl
Close #1
Close #2
'
' load new data and store in current and expected history arrays
'

Set Period = Worksheets("sheet1").Cells(2, 3)
For Ncan = 1 To NCanals
    For Ncrop = 4 To 13
        Set current(Period, Ncrop, Ncan) = Worksheets("sheet1").Cells(Ncan + 4, Ncrop)
        Set expected(Period, Ncrop, Ncan) = Worksheets("sheet1").Cells(Ncan + 4, Ncrop + 10)
    Next Ncrop
    Next Ncan
'

```

Table 6-2. (Continued)

```

' compute areas planted in this interval or expected planting for next, and store in planting history files
'
Open "c:\canal\planting" For Output As #3
For cl = 1 To NCanals
For cr = 1 To 13
For p = 1 To 24
If p = 1 Then
    planting(1, cr, cl) = current(p, cr, cl) - current(24, cr, cl)
Else
    planting(p, cr, cl) = current(p, cr, cl) - current(p - 1, cr, cl)
End If
If planting(p, cr, cl) < 0 Then planting(p, cr, cl) = 0

ExpPlant(p, cr, cl) = expected(p, cr, cl) - current(p, cr, cl)
If ExpPlant(p, cr, cl) < 0 Then ExpPlant(p, cr, cl) = 0

Next p
Next cr
Next cl
For cl = 1 To NCanals
    Write #3, "Canal Number", cl
For p = 1 To 24
    Write #3, planting(p, 4, cl), planting(p, 5, cl), planting(p, 6, cl), planting(p, 7, cl), planting(p, 8, cl),
planting(p, 9, cl), planting(p, 10, cl), planting(p, 11, cl), planting(p, 12, cl), planting(p, 13, cl)
    Next p
    Next cl
    Close #3
'
'Re-write current and expected history files
'
Open "c:\canal\current" For Output As #1
For cl = 1 To NCanals
    Write #1, "Canal Number", cl
For p = 1 To 24
    Write #1, current(p, 4, cl), current(p, 5, cl), current(p, 6, cl), current(p, 7, cl), current(p, 8, cl), current(p, 9, cl),
current(p, 10, cl), current(p, 11, cl), current(p, 12, cl), current(p, 13, cl)
Next p
Next cl
Open "c:\canal\expected" For Output As #2
For cl = 1 To NCanals
    Write #2, "Canal Number", cl
For p = 1 To 24
    Write #2, expected(p, 4, cl), expected(p, 5, cl), expected(p, 6, cl), expected(p, 7, cl), expected(p, 8, cl),
expected(p, 9, cl), expected(p, 10, cl), expected(p, 11, cl), expected(p, 12, cl), expected(p, 13, cl)
Next p
Next cl

Close #1
Close #2
'
' ##### Display history files for designated canal #####
'
Set canal = Worksheets("sheet2").Cells(5, 2)
Worksheets("sheet2").Cells(5, 2).Value = canal
Worksheets("sheet2").Cells(2, 15).Value = Period
For p = 1 To 24
    DataRow = Period - p + 1
    If Period - p < 0 Then

```

Table 6-2. (Continued)

```

        DataRow = Period + 24 - p + 1
    End If
For K = 3 To 12
    Worksheets("sheet2").Cells(25 - p + 7, 2).Value = DataRow
    Worksheets("sheet2").Cells(25 - p + 7, K).Value = current(DataRow, K + 1, canal)
    Worksheets("sheet2").Cells(25 - p + 7, K + 12).Value = planting(DataRow, K + 1, canal)
    Worksheets("sheet2").Cells(25 - p + 7, K + 23).Value = expected(DataRow, K + 1, canal)
Next K
Next p
'
' ##### Calculate weighted averages of Kc, and volumes of other crop water needs #####
' ##### for each crop in each canal #####
'

' Notes:
'   If Forecast = 0 the forecast is for the next 15 days
'   If Forecast = 1 the forecast is for the period 15 to 30 days in the future
'   If Flag = 99 then the crop is a perennial, and KcAvg will be set to Kc(period), i.e.
'       the crop coefficient will be independent of planting date, and will only
'       depend on time of year
'

For Forecast = 0 To 1
    Set Period = Worksheets("sheet1").Cells(2, 3)
    T = Period
'
    Read in values of Kc, Flag and OCwr from W/S #3 for all crops over all tau #####
'

For tau = 0 To 23
For cr = 1 To 9
    Set Flag(cr) = Worksheets("sheet3").Cells(6, cr)
    Set Kc(tau, cr) = Worksheets("sheet3").Cells(8 + tau, cr)
    Set OCwr(tau, cr) = Worksheets("sheet3").Cells(8 + tau, cr + 14)
Next cr
Next tau
'

For cl = 1 To NCanals
For cr = 1 To 9
    SumA = 0
    SumAK = 0
    SumOCwr(cl, cr) = 0

If Forecast = 1 Then
    SumA = ExpPlant(Period, cr + 3, cl)
    SumAK = ExpPlant(Period, cr + 3, cl) * Kc(0, cr)
    SumOCwr(cl, cr) = OCwr(0, cr) * ExpPlant(Period, cr + 3, cl)
End If
'
    Aggregate areas planted, Kc times area, and OCwr over all intervals where planting occurred

For tau = 0 To 12 - Forecast
    If T - tau < 1 Then
        Offset = 24
    Else
        Offset = 0
    End If

    SumA = SumA + planting(T - tau + Offset, cr + 3, cl)

```

Table 6-2. (Continued)

```

SumAK = SumAK + planting(T - tau + Offset, cr + 3, cl) * Kc(tau + Forecast, cr)
SumOCwr(cl, cr) = SumOCwr(cl, cr) + OCwr(tau + Forecast, cr) * planting(T - tau + Offset, cr + 3, cl)

```

Next tau

' for perennial crops set KcAvg to constant value

```

If Flag(cr) = 99 Then
    KcAvg(cl, cr) = Kc(Period - 1, cr)
Else
'
```

```

If SumA <= 0 Then
    KcAvg(cl, cr) = 0
Else
    KcAvg(cl, cr) = SumAK / SumA
End If
End If
If Forecast = 0 Then
    Worksheets("sheet5").Cells(cl + 5, cr + 3).Value = KcAvg(cl, cr)
Else
    Worksheets("sheet5").Cells(cl + NCanals + 8, cr + 3).Value = KcAvg(cl, cr)
End If

```

Next cr

Next cl

```
#####
##### Compute water duties by canal and crop for given period #####
#####
```

```

If Period = 24 Then
    If Forecast = 1 Then
        Set ET0 = Worksheets("sheet3").Cells(8, 11)
        Set Rain = Worksheets("sheet3").Cells(8, 12)
        Set Plength = Worksheets("sheet3").Cells(8, 26)
        Set Eff = Worksheets("sheet3").Cells(35, 5)
    Else
        Set ET0 = Worksheets("sheet3").Cells(Period + 7 + Forecast, 11)
        Set Rain = Worksheets("sheet3").Cells(Period + 7 + Forecast, 12)
        Set Plength = Worksheets("sheet3").Cells(Period + 7, 26)
        Set Eff = Worksheets("sheet3").Cells(35, 5)
    End If
Else
    Set ET0 = Worksheets("sheet3").Cells(Period + 7 + Forecast, 11)
    Set Rain = Worksheets("sheet3").Cells(Period + 7 + Forecast, 12)
    Set Plength = Worksheets("sheet3").Cells(Period + 7, 26)
    Set Eff = Worksheets("sheet3").Cells(35, 5)
End If

```

```

For cl = 1 To NCanals
    SumW = 0
For cr = 1 To 9
    If Forecast = 0 Then
        AreaF = current(Period, cr + 3, cl)
    Else
        AreaF = expected(Period, cr + 3, cl)
    End If

```

If KcAvg(cl, cr) <= 0 Then

Table 6-2. (Continued)

```

If AreaF = 0 Then
    duty = 0
Else
    duty = 0 + SumOCwr(cl, cr) / (Plength * AreaF)
    MinID = Worksheets("sheet3").Cells(32, cr)
    ThDuty = MinID / Plength
    If duty < ThDuty Then
        duty = ThDuty
    End If
End If
Else
    If AreaF = 0 Then
        duty = 0
    Else
        duty = (KcAvg(cl, cr) * ET0 - (Rain / Plength)) / Eff + SumOCwr(cl, cr) / (Plength * AreaF)
        MinID = Worksheets("sheet3").Cells(32, cr)
        ThDuty = MinID / Plength
        If duty < ThDuty Then
            duty = ThDuty
        End If
    End If
End If
End If
If duty < 0 Then
    duty = 0
End If
If Forecast = 0 Then
    Worksheets("sheet5").Cells(cl + 5, cr + 12).Value = duty
Else
    Worksheets("sheet5").Cells(cl + NCanals + 8, cr + 12).Value = duty
End If
'
' ##### Compute total daily required water volumes, by canal #####
'
If Forecast = 0 Then
    AreaF = current(Period, cr + 3, cl)
    SumW = SumW + duty * AreaF
Else
    AreaF = expected(Period, cr + 3, cl)
    SumW = SumW + duty * AreaF
End If
Next cr
TotW = SumW * 4.2
Worksheets("sheet1").Cells(4 + cl, 24 + Forecast).Value = TotW
If Period + 2 + Forecast <= 24 Then
    Worksheets("sheet9").Cells(4 + cl, Period + 2 + Forecast).Value = TotW
Else
    Worksheets("sheet9").Cells(4 + cl, 3).Value = TotW
End If
Next cl
Next Forecast
Worksheets("sheet5").Cells(2, 3).Value = Period
'
End Sub

```

6.4 Pilot District Results

This section presents the results of calculations without detailed discussion or interpretation (see Report 45 for discussion and interpretation of these results). The focus of this chapter is on how to use the tools to perform the calculations and prepare the graphs. Note that for the Luxor district, Table 3-1 shows 36 canals to which the MALR cropping pattern information is associated. MISD data collection and processing began on April 1, 2000, using these 36 canals covering the total command area for the district. Table 6-3 shows the input data of Sheet 3 of the operational tool for the Luxor district.

Table 6-4 shows calculations of Sheet 1 copied from Canal Demand, the crop water needs calculation spreadsheet, for the Luxor Irrigation District for each half-month period from April 1, 2000 through September 30, 2001. The cropping pattern data of Chapter 3 were used as input to Canal Demand for these calculations. A problem with the cropping pattern data was observed. Some of these calculations used raw cropping pattern data that had not been processed by the MALR Microsoft Access database. These raw data sometimes had errors indicated by reported crop areas not summing to total areas for the particular branch canal. This data problem was handled by adding check sums to Sheet 1 to help find and correct these data errors. The last two columns of Table 6-4 are check sums for each canal for the existing and expected cropping patterns, respectively. Each check sum value in these last two columns should equal the command area of the canal. If not, the data error must be found in the row and corrected. The first row of check sums below the last canal total the values in the respective columns. The two check sums in the bottom row sum over all crops of the existing and expected crop patterns, respectively, and of course, must equal the total district command area. These check sums have proven to be a valuable aid to ensuring correct data entry to the Canal Demand spreadsheet, but will be unnecessary when all cropping pattern data are processed by the MALR Access database.

Table 6-5 (Sheet 1 of Luxor DEMO) shows a comparison of calculated crop water needs and water delivered to the Luxor pilot district expressed as daily average over each half-month period from April 2000 through September 2001. Note that for any particular half month, the existing area of crop may differ from the expected area. Thus, two values of water delivered per feddan of cropped area are calculated. For each half-month period, four pieces of data available from results of Canal Demand must be entered into Luxor DEMO Sheet 1, shown here as Table 6-5. These four district-wide data values are: (1) crop water needs (million m³/day) for existing crops, (2) crop water needs (million m³/day) for expected crops, (3) existing area (feddans) of fallow, and (4) expected area (feddans) of fallow. In transposing these four data values from results of Canal Demand calculations (Table 6-4) to Luxor DEMO (Table 6-5) one must be very careful to enter the data into the correct cell of the spreadsheet. Note that for each period, the district-wide existing crop water requirement (m³/day) is given as the sum of the column labeled "0 – 2 wks" in Table 6-4. This value (934711 m³/day, for period 10, 2000, in Table 6-4) is entered into Table 6-5 as the water required for existing crops for the same time period (period 10, 16 May – 31 May, 2000, as 0.9347 million m³/day). In contrast, the district-wide expected crop water requirement (sum of column labeled "2 – 4 wks" in Table 6-4) must be entered into Table 6-5 for the next period. For example, the "2 – 4 wks" water requirement in Table 6-4, period 10 (1241822 m³/day), is entered into Table 6-5 as 1.2418 million m³/day for 1 Jun – 15 Jun. In other words, the governing time in Table 6-5 is listed in the columns labeled "Dates (To, From), Yr".

Table 6-3: Sheet 3 copied from Canal Demand, the crop water needs calculation spreadsheet, showing input data for the Luxor District.

Peren.	Crop Coefficients						Weather (mm/mo)	Lag time (tau)	Time (T)	Other crop water requirements (mm per period)	Period Lengths
	99	99	99	Garden	Other	Veget.					
Sugar	Maize	Sesam	Garden	Other	Veget.	Cotton	Rice	Wheat			
0.60	0.29	0.21	0.90	0.79	0.82	0.27	0.56	0.37	2.80	0.00	1
0.60	0.56	0.41	0.90	0.79	0.82	0.50	1.05	0.70	3.20	0.00	2
0.64	0.79	0.66	0.90	0.79	0.82	0.53	1.09	0.79	3.60	0.00	3
0.75	1.10	1.00	0.90	0.79	0.82	0.72	1.17	0.91	4.00	0.00	4
0.86	1.20	1.10	0.90	0.79	0.82	0.93	1.20	1.04	4.80	0.00	5
0.99	1.20	1.10	0.90	0.79	0.82	1.14	1.20	1.14	5.60	0.00	6
1.11	1.13	1.00	0.90	0.79	0.82	1.20	1.20	1.15	5.90	0.00	7
1.23	0.75	0.39	0.90	0.79	0.82	1.20	1.11	1.15	6.30	0.00	8
1.25	0.07	0.00	0.90	0.79	0.82	1.20	0.44	1.15	6.50	0.00	9
1.25	0.00	0.00	0.90	0.79	0.82	1.18	0.00	1.14	6.70	0.00	10
1.25	0.00	0.00	0.90	0.79	0.82	1.05	0.00	0.88	7.50	0.00	11
1.25	0.00	0.00	0.90	0.79	0.82	0.92	0.00	0.43	7.30	0.00	12
1.25	0.00	0.00	0.90	0.79	0.82	0.54	0.00	0.00	7.00	0.00	13
1.25	0.00	0.00	0.90	0.79	0.82	0.00	0.00	0.00	7.00	0.00	14
1.25	0.00	0.00	0.90	0.79	0.82	0.00	0.00	0.00	7.00	0.00	15
1.25	0.00	0.00	0.90	0.79	0.82	0.00	0.00	0.00	7.00	0.00	16
1.25	0.00	0.00	0.90	0.79	0.82	0.00	0.00	0.00	7.00	0.00	17
1.25	0.00	0.00	0.90	0.79	0.82	0.00	0.00	0.00	6.60	0.00	18
1.25	0.00	0.00	0.90	0.79	0.82	0.00	0.00	0.00	6.00	0.00	19
1.25	0.00	0.00	0.90	0.79	0.82	0.00	0.00	0.00	5.40	0.00	20
1.25	0.00	0.00	0.90	0.79	0.82	0.00	0.00	0.00	4.80	0.00	21
1.17	0.00	0.00	0.90	0.79	0.82	0.00	0.00	0.00	4.20	0.00	22
1.01	0.00	0.00	0.90	0.79	0.82	0.00	0.00	0.00	3.80	0.00	23
0.85	0.00	0.00	0.90	0.79	0.82	0.00	0.00	0.00	3.20	0.00	24
0.68	0.00	0.00	0.90	0.79	0.82	0.00	0.00	0.00	2.80	0.00	25
50	50	50	50	50	50	50	50	50	50	50	26

Efficiency

Appl. Canal

Total

0.75 0.9833 0.70

Number of canals

43.00

50 : Minimum Irrigation Depth (mm)

Period no.	length	Other crop water requirements (mm per period)						Period Lengths
		Sugar	Maize	Sesame	Garden	Other	Veget.	
1	15	0	75	0	0	0	0	0
2	16	0	0	0	0	0	0	0
3	15	0	0	0	0	0	0	0
4	13	0	0	0	0	0	0	0
5	15	0	0	0	0	0	0	0
6	16	0	0	0	0	0	0	0
7	15	0	0	0	0	0	0	0
8	15	0	0	0	0	0	0	0
9	15	0	0	0	0	0	0	0
10	16	0	0	0	0	0	0	0
11	15	0	0	0	0	0	0	0
12	15	0	0	0	0	0	0	0
13	15	0	0	0	0	0	0	0
14	16	0	0	0	0	0	0	0
15	15	0	0	0	0	0	0	0
16	16	0	0	0	0	0	0	0
17	15	0	0	0	0	0	0	0
18	15	0	0	0	0	0	0	0
19	15	0	0	0	0	0	0	0
20	16	0	0	0	0	0	0	0
21	15	0	0	0	0	0	0	0
22	15	0	0	0	0	0	0	0
23	15	0	0	0	0	0	0	0
24	16	0	0	0	0	0	0	0

Table 6-4. Sheet 1 copied from Canal Demand, the crop water needs calculation spreadsheet, for Luxor Irrigation District for half-month time periods, May 16 – 31, 2000 through September 15 – 30, 2001 (See file “Crops & Needs – Luxor” on disk).

Period Canal No	Name	Area (Fed.)	Current and Expected Cropping Pattern in Luxor Irrigation District (2000)										Water Requirements (m^3/dy)							
			Existing pattern										Expected pattern							
			Total	Sugar	Maize	Sesai	Gard	Other	V/Cd/R	Wheat	Fallow	Sugar	Maize	Sesai	Gard	Other	V/Cd/R	Wheat	Fallow	
1	Elmalia	1519	786	325	35	99	136	0	0	0	138	884	325	35	99	77	0	0	99	
2	Elslama - South	104	2	40	30	25	7	0	0	0	0	2	40	30	25	7	0	0	0	
3	Sahef Elshaab	95	55	5	0	19	16	0	0	0	63	5	0	19	0	0	0	0	8	
4	Sahef Elodiseat	781	430	29	0	186	136	0	0	0	486	29	0	186	19	0	0	0	61	
5	Elslama - North	1418	396	689	75	23	89	0	0	0	146	468	689	75	23	106	0	0	57	
6	Ganabit Elbostan	425	121	23	25	8	18	0	0	0	40	137	213	25	8	20	0	0	22	
7	Elhosha	1428	649	436	10	1	43	0	0	0	229	721	496	10	1	85	0	0	0	
8	Elheba Main	1193	462	116	28	61	0	0	0	123	452	462	116	28	67	0	0	0	68	
9	Elheba East	1212	433	55	32	26	54	0	0	0	116	487	551	32	26	56	0	0	60	
10	Gnabit Elheba East	701	320	264	18	4	15	0	0	0	80	360	264	18	4	22	0	0	33	
11	Elalia New	1368	460	236	116	64	146	0	0	0	346	519	236	116	64	167	0	0	266	
12	Elawima	307	4	167	52	35	49	0	0	0	0	4	167	52	35	49	0	0	0	
13	Elgabia	496	122	204	74	28	43	0	0	0	226	204	204	74	28	30	0	0	24	
14	Metawe	296	0	180	33	7	55	0	0	0	41	0	160	33	7	96	0	0	0	
15	Ganabit Elhebel West	325	219	10	10	12	15	0	0	0	59	256	10	10	12	7	0	0	30	
16	Elshekh Branch	524	296	101	38	0	10	0	0	0	79	332	101	38	0	18	0	0	35	
17	Elkarnak East	1940	796	564	88	31	170	0	0	0	291	900	564	88	31	279	0	0	0	
18	Ganabit Elkarnak East	1190	511	121	18	103	0	0	0	226	168	211	121	18	168	0	0	0	65	
19	Elroda	240	157	35	0	10	0	0	0	38	171	35	0	0	17	0	0	0	14073	
20	Eloxour	3407	1897	715	22	103	0	0	0	514	2136	715	156	22	142	0	0	0	6035	
21	Ganabit Elkarnak West	1393	801	232	37	4	66	0	0	0	253	906	232	37	4	126	0	0	88	
22	Ganabit Elkarnak (1)	153	82	15	10	1	12	0	0	0	33	91	15	10	1	22	0	0	0	
23	Ganabit Elkarnak (2)	623	288	145	15	2	49	0	0	0	124	334	145	15	2	92	0	0	0	
24	Ganabit Elkarnak (3)	119	64	20	5	0	10	0	0	0	20	71	20	5	0	16	0	0	7	
25	Eloxour Branch 1	253	57	111	48	0	8	0	0	0	29	72	111	48	0	14	0	0	8	
26	Eloxour Branch 2	368	223	54	5	0	17	0	0	0	69	252	54	5	0	30	0	0	27	
27	Eloxour Branch 3	249	151	37	0	1	13	0	0	0	47	172	37	0	1	22	0	0	0	
28	Sahef Eleshy	1172	440	100	155	222	0	0	0	26	503	229	100	155	136	0	0	49	41236	
29	Elzena	242	17	95	40	30	60	0	0	0	20	95	40	30	54	0	0	0	6509	
30	Eloxour Branch 4	260	146	20	5	0	25	0	0	0	64	173	20	5	0	46	0	0	16	
31	Eloxour Branch 5	322	192	35	16	0	7	0	0	0	72	238	35	16	0	7	0	0	26	
32	Eloxour Branch 6	123	97	0	0	0	0	0	0	0	26	111	0	0	0	0	0	0	17	
33	Elsaida	330	149	38	10	12	37	0	0	0	45	154	86	10	12	51	0	0	17	
34	Eloxour Branch 7	485	353	14	0	13	0	0	0	105	405	14	0	0	0	22	0	0	0	
35	Elodesy	144	77	24	0	6	15	0	0	0	22	81	24	0	6	24	0	0	9	
36	Elwalia	1851	530	605	319	89	172	0	0	0	136	607	605	319	89	164	0	0	67	
37	Elalia	487	134	104	8	44	0	0	0	62	151	135	104	8	73	0	0	0	12824	
38	Elwellab	222	74	16	60	7	29	0	0	0	36	87	16	60	7	43	0	0	9	
39	Syait Bdran	101	0	76	18	1	5	0	0	0	1	0	76	18	1	6	0	0	44	
40	Nile	623	191	81	48	241	60	0	0	0	2	222	81	48	241	18	0	0	13	
41	Ground Water	727	160	322	48	5	82	0	0	0	110	189	322	48	5	154	0	0	9	
42	Elkabia	94	0	71	0	10	13	0	0	0	0	71	0	0	10	13	0	0	0	
43	Elbiadia	7	0	7	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	
Check Sums:			29317	12274	7907	1917	1208	2238	0	0	0	3773	13960	7907	1917	1208	2565	0	0	0
Check Sums:																	1760	934711	1241822	
																		29317	29317	

Table 6-4. (Continued).

Period	Canal	No	Name	Current and Expected Cropping Pattern in Luxor Irrigation District (2000)										Water Requirements (m^3/dy)		Check Sums										
				Total	Sugar	Maized	Sesai	Gard	Other	Ve	Ca	R	Wheat	Fallow	Sugar	Maized	Sesai	Gard	Other	1/4 Cdr	Wheat	Fallow	0 - 2 wks	2 - 4 wks	Existing	Expected
Area (Fed.)				Existing pattern										Expected pattern												
11	Elmala	1519	983	325	35	99	77	0	0	0	0	983	325	35	99	77	0	0	0	0	0	0	74240	77056	1519	1519
2	Elsiamia - South	104	2	40	30	25	0	0	0	0	0	71	0	40	30	25	0	0	0	0	0	0	3349	4132	104	104
3	Sahel Elshaaib	95	71	5	0	19	0	0	0	0	0	547	29	5	0	19	0	0	0	0	0	0	4977	95	95	95
4	Sahel Eljodisat	781	547	29	0	186	19	0	0	0	0	547	29	0	186	19	0	0	0	0	0	0	40008	39335	781	781
5	Elsiamia - North	1418	525	689	75	23	106	0	0	0	0	525	689	75	23	106	0	0	0	0	0	0	60109	68682	1418	1418
6	Canabit Elbotstan	425	159	213	25	8	20	0	0	0	0	159	213	25	8	20	0	0	0	0	0	0	18012	20698	425	425
7	Elhosha	1428	836	496	10	1	85	0	0	0	0	836	496	10	1	85	0	0	0	0	0	0	67905	72938	1428	1428
8	Elhebel Main	1193	520	462	116	28	67	0	0	0	0	520	462	116	28	67	0	0	0	0	0	0	57505	60383	1193	1193
9	Elhebel East	1212	547	551	32	26	56	0	0	0	0	547	551	32	26	56	0	0	0	0	0	0	53991	60383	1212	1212
10	Gnabit Elhebel East	701	393	284	18	4	22	0	0	0	0	393	264	18	4	22	0	0	0	0	0	0	32768	35676	701	701
11	Elalia New	1388	585	436	116	64	167	0	0	0	0	585	436	116	64	167	0	0	0	0	0	0	58775	59960	1368	1368
12	Elawima	307	4	167	52	35	49	0	0	0	0	4	167	52	35	49	0	0	0	0	0	0	10281	12843	307	307
13	Elgabba	486	160	204	74	28	30	0	0	0	0	160	204	74	28	30	0	0	0	0	0	0	19818	22870	496	496
14	Metawe	296	0	160	33	7	96	0	0	0	0	0	160	33	7	96	0	0	0	0	0	0	9983	12260	296	296
15	Ganabit Elhebel West	325	286	10	10	12	7	0	0	0	0	286	10	10	12	7	0	0	0	0	0	0	17362	17145	325	325
16	Elsheikh Branch	524	367	101	38	0	18	0	0	0	0	367	101	38	0	18	0	0	0	0	0	0	25575	26681	524	524
17	Elkarnak East	1940	978	564	88	31	279	0	0	0	0	978	564	88	31	279	0	0	0	0	0	0	87860	94139	1940	1940
18	Ganabit Elkarnak East	1190	672	211	121	18	168	0	0	0	0	672	211	121	18	168	0	0	0	0	0	0	54235	56979	1190	1190
19	Elroda	120	188	35	0	0	17	0	0	0	0	188	35	0	0	17	0	0	0	0	0	0	12424	15668	240	240
20	Eloxour	3407	2372	715	156	22	142	0	0	0	0	2372	715	156	22	142	0	0	0	0	0	0	167661	174606	3407	3407
21	Ganabit Elkarnak West	1333	994	232	37	4	126	0	0	0	0	984	232	37	4	126	0	0	0	0	0	0	69484	71186	1393	1393
22	Ganabit Elkarnak (1)	153	105	15	10	1	22	0	0	0	0	105	15	10	1	22	0	0	0	0	0	0	7447	7561	153	153
23	Ganabit Elkarnak (2)	623	369	145	15	2	92	0	0	0	0	369	145	15	2	92	0	0	0	0	0	0	30885	30885	623	623
24	Ganabit Elkarnak (3)	119	78	20	5	0	16	0	0	0	0	78	20	5	0	16	0	0	0	0	0	0	5760	5932	119	119
25	Eloxour Branch 1	253	80	111	48	0	14	0	0	0	0	80	111	48	0	14	0	0	0	0	0	0	9829	11600	253	253
26	Eloxour Branch 2	368	279	54	5	0	30	0	0	0	0	279	54	5	0	30	0	0	0	0	0	0	18772	19060	368	368
27	Eloxour Branch 3	249	189	37	0	1	22	0	0	0	0	189	37	0	1	22	0	0	0	0	0	0	12769	12931	249	249
28	Sahel Eljodisat	1172	552	229	100	155	136	0	0	0	0	552	229	100	155	136	0	0	0	0	0	0	52148	54962	1172	1172
29	Elzena	242	23	95	40	30	54	0	0	0	0	23	95	40	30	54	0	0	0	0	0	0	8544	8544	242	242
30	Eloxour Branch 4	189	20	5	0	46	0	0	0	0	0	189	20	5	0	46	0	0	0	0	0	0	13070	13048	260	260
31	Eloxdesy Branch 5	322	264	35	16	0	0	0	0	0	0	264	35	16	0	7	0	0	0	0	0	0	16638	16845	322	322
32	Eloxour Branch 6	123	123	0	0	0	0	0	0	0	0	123	0	0	0	0	0	0	0	0	0	0	6919	6734	123	123
33	Elsaida	330	171	86	10	12	51	0	0	0	0	171	86	10	12	51	0	0	0	0	0	0	15160	16033	330	330
34	Eloxour Branch 7	485	449	14	0	0	22	0	0	0	0	449	14	0	0	22	0	0	0	0	0	0	26536	26019	485	485
35	Elodesy	144	90	24	0	6	24	0	0	0	0	90	24	0	6	24	0	0	0	0	0	0	7012	7151	144	144
36	Elwattia	1851	674	319	89	164	0	0	0	0	674	319	89	164	0	0	0	0	0	0	0	74741	84455	1851	1851	
37	Elalia	487	167	135	104	8	73	0	0	0	0	167	135	104	8	73	0	0	0	0	0	0	19031	21495	487	487
38	Elwelab	222	96	16	60	7	43	0	0	0	0	96	16	60	7	43	0	0	0	0	0	0	8888	9525	222	222
39	Syalt Baran	101	0	76	18	1	6	0	0	0	0	76	18	1	6	0	0	0	0	0	0	3288	4429	101	101	
40	Nile	623	235	81	48	241	18	0	0	0	0	235	81	48	241	18	0	0	0	0	0	0	27384	28279	623	623
41	Ground Water	727	198	322	48	5	154	0	0	0	0	198	322	48	5	154	0	0	0	0	0	0	29147	33268	727	727
42	Elklabia	94	0	71	0	10	13	0	0	0	0	71	0	10	13	0	0	0	0	0	0	3391	4265	94	94	
43	Elbiadia	7	0	7	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	249	337	7	7	
Check Sums:										Check Sums:										1427375		29317	29317			

Table 6-4. (Continued).

No	Name	Canal	Period	Current and Expected Cropping Pattern in Luxor Irrigation District (2000)												Water Requirements (m^3/dy)	Check Sums Existing Expected											
				Total	Sugar	Maized	Sesai	Gard	Other	Ve	Ca	R	Wheat	Fallow	Sugar	Maized	Sesai	Gard	Other	Ve	Ca	R	Wheat	Fallow				
				Area (Fed.)												0 - 2 wks 2 - 4 wks												
1	Elmala	1519	983	325	35	99	77	0	0	0	0	983	325	35	99	77	0	0	0	0	0	0	0	0	0	75755	1519	
2	Eislamia - South	104	2	40	30	25	7	0	0	0	0	71	0	40	30	25	7	0	0	0	0	0	0	0	0	4132	4558	
3	Sahel Elshaaib	95	71	5	0	19	0	0	0	0	0	547	29	5	0	19	0	0	0	0	0	0	0	0	0	4877	95	
4	Sahel Eljodiset	781	547	29	0	186	19	0	0	0	0	547	29	0	186	19	0	0	0	0	0	0	0	0	0	39355	781	
5	Eislamia - North	1418	525	689	75	23	106	0	0	0	0	525	689	75	23	106	0	0	0	0	0	0	0	0	0	68682	1418	
6	Canabit Elbotstan	425	159	213	25	8	20	0	0	0	0	159	213	25	8	20	0	0	0	0	0	0	0	0	0	20698	425	
7	Elhosha	1428	836	496	10	1	85	0	0	0	0	836	496	10	1	85	0	0	0	0	0	0	0	0	0	0	72938	1428
8	Elhebel Main	1193	520	462	116	28	67	0	0	0	0	520	462	116	28	67	0	0	0	0	0	0	0	0	0	57555	1193	
9	Elhebel East	1212	547	551	32	26	56	0	0	0	0	547	551	32	26	56	0	0	0	0	0	0	0	0	0	60383	1212	
10	Gnabit Elhebel East	701	393	284	18	4	22	0	0	0	0	393	264	18	4	22	0	0	0	0	0	0	0	0	0	35575	701	
11	Elalia New	1388	585	436	116	64	167	0	0	0	0	585	436	116	64	167	0	0	0	0	0	0	0	0	0	59960	1368	
12	Elawima	307	4	167	52	35	49	0	0	0	0	4	167	52	35	49	0	0	0	0	0	0	0	0	0	12843	307	
13	Elgabba	486	160	204	74	28	30	0	0	0	0	160	204	74	28	30	0	0	0	0	0	0	0	0	0	3843	496	
14	Metawe	296	0	160	33	7	96	0	0	0	0	0	160	33	7	96	0	0	0	0	0	0	0	0	0	12270	296	
15	Ganabit Elhebel West	325	286	10	10	12	7	0	0	0	0	286	10	10	12	7	0	0	0	0	0	0	0	0	0	12260	296	
16	Elshekh Branch	524	367	101	38	0	18	0	0	0	0	367	101	38	0	18	0	0	0	0	0	0	0	0	0	0	35676	524
17	Elkarnak East	1940	978	564	88	31	279	0	0	0	0	978	564	88	31	279	0	0	0	0	0	0	0	0	0	62075	1940	
18	Ganabit Elkarnak East	1190	672	211	121	18	168	0	0	0	0	672	211	121	18	168	0	0	0	0	0	0	0	0	0	93896	1190	
19	Elroda	240	188	35	0	0	17	0	0	0	0	188	35	0	0	17	0	0	0	0	0	0	0	0	0	12951	1190	
20	Eloxour	3407	2372	715	156	22	142	0	0	0	0	2372	715	156	22	142	0	0	0	0	0	0	0	0	0	174606	3407	
21	Ganabit Elkarnak West	1333	994	232	37	4	126	0	0	0	0	984	232	37	4	126	0	0	0	0	0	0	0	0	0	71186	1393	
22	Ganabit Elkarnak (1)	153	105	15	10	1	22	0	0	0	0	105	15	10	1	22	0	0	0	0	0	0	0	0	0	7561	153	
23	Ganabit Elkarnak (2)	623	369	145	15	2	92	0	0	0	0	369	145	15	2	92	0	0	0	0	0	0	0	0	0	30439	623	
24	Ganabit Elkarnak (3)	119	78	20	5	0	16	0	0	0	0	78	20	5	0	16	0	0	0	0	0	0	0	0	0	5952	119	
25	Eloxour Branch 1	253	80	111	48	0	14	0	0	0	0	80	111	48	0	14	0	0	0	0	0	0	0	0	0	11600	253	
26	Eloxour Branch 2	368	279	54	5	0	30	0	0	0	0	279	54	5	0	30	0	0	0	0	0	0	0	0	0	19060	368	
27	Eloxour Branch 3	249	189	37	0	1	22	0	0	0	0	189	37	0	1	22	0	0	0	0	0	0	0	0	0	12931	249	
28	Sahel Eljeshy	1172	552	229	100	155	136	0	0	0	0	552	229	100	155	136	0	0	0	0	0	0	0	0	54962	1172		
29	Elzena	242	23	95	40	30	54	0	0	0	0	23	95	40	30	54	0	0	0	0	0	0	0	0	0	10044	242	
30	Eloxour Branch 4	189	20	5	0	46	0	0	0	0	0	189	20	5	0	46	0	0	0	0	0	0	0	0	0	13048	242	
31	Eloodesy	144	90	24	0	6	24	0	0	0	0	90	24	0	6	24	0	0	0	0	0	0	0	0	0	7151	144	
32	Eloodia	1851	674	319	89	164	0	0	0	0	0	674	319	89	164	0	0	0	0	0	0	0	0	0	84455	1851		
33	Elasida	330	171	86	10	12	51	0	0	0	0	171	86	10	12	51	0	0	0	0	0	0	0	0	21495	123		
34	Eloxour Branch 7	485	449	14	0	0	22	0	0	0	0	449	14	0	0	22	0	0	0	0	0	0	0	0	0	15878	330	
35	Elodesy	144	90	24	0	6	24	0	0	0	0	90	24	0	6	24	0	0	0	0	0	0	0	0	0	26019	485	
36	Elwattia	1851	674	322	48	5	154	0	0	0	0	235	81	48	241	18	0	0	0	0	0	0	0	0	6958	144		
37	Elalia	487	167	135	104	8	73	0	0	0	0	167	135	104	8	73	0	0	0	0	0	0	0	0	84455	1851		
38	Elwelab	222	96	16	60	7	43	0	0	0	0	96	16	60	7	43	0	0	0	0	0	0	0	0	9625	222		
39	Syalt Barian	101	0	76	18	1	6	0	0	0	0	76	18	1	6	0	0	0	0	0	0	0	0	0	4429	101		
40	Nile	623	235	81	48	241	18	0	0	0	0	235	81	48	241	18	0	0	0	0	0	0	0	0	28279	623		
41	Ground Water	727	198	322	48	5	154	0	0	0	0	198	322	48	5	154	0	0	0	0	0	0	0	0	33268	727		
42	Elklabia	94	0	71	0	10	13	0	0	0	0	71	0	10	13	0	0	0	0	0	0	0	0	0	4265	94		
43	Elbiadia	7	0	7	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	337	7	
Check Sums:												0	15520	8107	1917	1208	2565	0	0	0	0	0	0	0	142735	29317		
Check Sums:												0	0	0	0	0	0	0	0	0	0	0	0	0	29317	29317		

Table 6-4. (Continued).

Current and Expected Cropping Pattern in Luxor Irrigation District (2000)

Period	Canal	No	Name	Area (Fed.)										Water Requirements (m^3/dy)						Check Sums								
				Total	Sugar	Maiza	Sesai	Gard	Other	Vegetable	Corn	Rice	Wheat	Fallow	Sugar	Maiza	Sesai	Gard	Other	Vegetable	Corn	Rice	Wheat	Fallow	0 - 2 wks	2 - 4 wks	Check Sums	
1	Elmala	1519	983	325	35	99	77	0	0	0	983	325	35	99	77	0	0	0	0	0	0	0	0	0	75755	75902	1519	
2	Elsiamia - South	104	2	40	30	25	7	0	0	0	0	2	40	30	25	7	0	0	0	0	0	0	0	0	4558	4684	104	
3	Sahel Elshaab	95	71	5	0	19	0	0	0	0	0	71	5	0	0	0	0	0	0	0	0	0	0	0	4698	4698	95	
4	Sahel Elodisat	781	547	29	0	186	19	0	0	0	0	547	29	0	186	19	0	0	0	0	0	0	0	0	37840	37840	781	
5	Elsiamia - North	1418	525	689	75	23	106	0	0	0	0	525	689	75	23	106	0	0	0	0	0	0	0	0	69825	70140	1418	
6	Canabit Elbotstan	425	159	213	25	8	20	0	0	0	0	159	213	25	8	20	0	0	0	0	0	0	0	0	21099	21204	425	
7	Elhosha	1428	836	486	10	1	85	0	0	0	0	836	496	10	1	85	0	0	0	0	0	0	0	0	72167	72209	1428	
8	Elhebel Main	1193	520	462	116	28	67	0	0	0	0	520	462	116	28	67	0	0	0	0	0	0	0	0	59225	59225	1193	
9	Elhebel East	1212	547	551	32	26	56	0	0	0	0	547	551	32	26	56	0	0	0	0	0	0	0	0	60673	60807	1212	
10	Gnabit Elhebel East	701	393	264	18	4	22	0	0	0	0	393	264	18	4	22	0	0	0	0	0	0	0	0	35575	35651	701	
11	Elalia New	1368	585	436	116	64	167	0	0	0	0	585	436	116	64	167	0	0	0	0	0	0	0	0	65166	65166	1368	
12	Elawima	307	4	167	52	35	49	0	0	0	0	4	167	52	35	49	0	0	0	0	0	0	0	0	13760	13978	307	
13	Elqabia	486	160	204	74	28	30	0	0	0	0	160	204	74	28	30	0	0	0	0	0	0	0	0	23843	24154	496	
14	Metawe	296	160	33	7	0	0	0	0	0	0	160	33	7	0	0	0	0	0	0	0	0	0	0	12900	13038	296	
15	Ganabit Elhebel West	325	286	10	12	7	0	0	0	0	0	286	10	12	7	0	0	0	0	0	0	0	0	0	16625	16667	325	
16	Elshekh Branch	524	367	101	38	0	18	0	0	0	0	367	101	38	0	18	0	0	0	0	0	0	0	0	26551	26711	524	
17	Elkarnak East	1940	978	564	89	31	279	0	0	0	0	978	564	88	31	279	0	0	0	0	0	0	0	0	93896	94265	1940	
18	Ganabit Elkarnak East	1190	672	211	121	18	168	0	0	0	0	672	211	121	18	168	0	0	0	0	0	0	0	0	57759	57759	1190	
19	Elroda	240	188	35	0	0	17	0	0	0	0	188	35	0	0	17	0	0	0	0	0	0	0	0	12198	12407	240	
20	Eloxour	3407	2372	715	156	22	142	0	0	0	0	2372	715	156	22	142	0	0	0	0	0	0	0	0	172681	173316	3407	
21	Ganabit Elkarnak West	1333	994	232	37	4	126	0	0	0	0	994	232	37	4	126	0	0	0	0	0	0	0	0	69764	69919	1393	
22	Ganabit Elkarnak (1)	153	105	15	10	1	22	0	0	0	0	105	15	10	1	22	0	0	0	0	0	0	0	0	7456	7498	153	
23	Ganabit Elkarnak (2)	623	369	145	15	2	92	0	0	0	0	369	145	15	2	92	0	0	0	0	0	0	0	0	30439	30502	623	
24	Ganabit Elkarnak (3)	119	78	20	5	0	16	0	0	0	0	78	20	5	0	16	0	0	0	0	0	0	0	0	5844	5865	119	
25	Eloxour Branch 1	253	80	111	48	0	14	0	0	0	0	80	111	48	0	14	0	0	0	0	0	0	0	0	12275	12477	253	
26	Eloxour Branch 2	368	279	54	5	0	30	0	0	0	0	279	54	5	0	30	0	0	0	0	0	0	0	0	18575	18596	368	
27	Eloxour Branch 3	249	189	37	0	1	22	0	0	0	0	189	37	0	1	22	0	0	0	0	0	0	0	0	12555	12555	249	
28	Sahel Elieshy	1172	552	229	100	155	136	0	0	0	0	562	229	100	155	136	0	0	0	0	0	0	0	0	55093	55513	1172	
29	Eizena	242	23	95	40	30	54	0	0	0	0	23	95	40	30	54	0	0	0	0	0	0	0	0	10601	10769	242	
30	Eloxour Branch 4	260	189	20	5	0	46	0	0	0	0	189	20	5	0	46	0	0	0	0	0	0	0	0	12667	12688	260	
31	Eloxour Branch 5	322	264	35	0	7	0	0	0	0	0	264	35	0	7	0	0	0	0	0	0	0	0	0	16595	16595	322	
32	Eloxour Branch 6	123	123	0	0	0	0	0	0	0	0	123	0	0	0	0	0	0	0	0	0	0	0	0	6458	6458	123	
33	Elsaida	330	171	86	10	12	51	0	0	0	0	171	86	10	12	51	0	0	0	0	0	0	0	0	15878	15920	330	
34	Eloxour Branch 7	485	449	14	0	0	22	0	0	0	0	449	14	0	0	22	0	0	0	0	0	0	0	0	25008	25008	485	
35	Elodesy	144	90	24	0	6	24	0	0	0	0	90	24	0	6	24	0	0	0	0	0	0	0	0	6958	6958	144	
36	Elwatta	1851	674	605	319	89	164	0	0	0	0	674	605	319	89	164	0	0	0	0	0	0	0	0	88081	89421	1851	
37	Elalia	487	167	135	104	8	73	0	0	0	0	167	135	104	8	73	0	0	0	0	0	0	0	0	22664	23101	487	
38	Elweljab	222	96	16	60	7	43	0	0	0	0	96	16	60	7	43	0	0	0	0	0	0	0	0	10658	10658	222	
39	Syalt Baran	101	0	76	18	1	6	0	0	0	0	76	18	1	6	0	0	0	0	0	0	0	0	0	4823	4899	101	
40	Nile	623	235	81	48	241	18	0	0	0	0	235	81	48	241	18	0	0	0	0	0	0	0	0	28143	28345	623	
41	Ground Water	727	198	322	48	5	154	0	0	0	0	198	322	48	5	154	0	0	0	0	0	0	0	0	34140	727	1851	
42	Elkabia	94	0	71	0	10	13	0	0	0	0	71	0	10	13	0	0	0	0	0	0	0	0	0	4388	4388	94	
43	Elbiadia	7	0	7	0	0	0	0	0	0	0	7	0	0	0	7	0	0	0	0	0	0	0	0	353	353	7	
Check Sums:													29317	15520	8107	1917	1208	2565	0	0	0	0	0	0	0	1441887	29317	29317

Table 6-4. (Continued).

Period	Canal	Current and Expected Cropping Pattern in Luxor Irrigation District (2000)														Water Requirements (m^3/dy)	Check Sums				
		No	Name	Total	Sugar	Maized Sesai	Gard Other	Ve	CaR	Wheat	Fallow	Sugar	Maized Sesai	Gard Other	Ve	CaR	Wheat	Fallow			
				Area (Fed.)														0 - 2 wks	2 - 4 wks		
1	Elmala	1519	983	325	35	99	77	0	0	0	983	325	35	99	77	0	0	0	75902	74946	
2	Eislamia - South	104	2	40	30	25	7	0	0	0	0	71	40	30	25	7	0	0	4654	4567	
3	Sahel Eljodisat	95	71	5	0	19	0	0	0	0	0	547	5	0	0	0	0	0	4683	95	
4	Sahel Eljodisat	781	547	29	0	186	19	0	0	0	0	547	29	0	186	19	0	0	37755	781	
5	Eislamia - North	1418	525	689	75	23	106	0	0	0	0	525	689	75	23	106	0	0	70140	68114	
6	Canabit Elbotstan	425	159	213	25	8	20	0	0	0	0	159	213	25	8	20	0	0	21204	20577	
7	Elhosha	1428	836	496	10	1	85	0	0	0	0	836	496	10	1	85	0	0	72209	70750	
8	Elhebal Main	1193	520	462	116	28	67	0	0	0	0	520	462	116	28	67	0	0	59225	57867	
9	Elhebal East	1212	547	551	32	26	56	0	0	0	0	547	551	32	26	56	0	0	60807	59187	
10	Gnabit Elhebel East	701	393	284	18	4	22	0	0	0	0	393	264	18	4	22	0	0	35651	34875	
11	Elalia New	1388	585	436	116	64	167	0	0	0	0	585	436	116	64	167	0	0	65166	65313	
12	Elawima	307	4	167	52	35	49	0	0	0	0	4	167	52	35	49	0	0	13978	13487	
13	Elgabba	486	160	204	74	28	30	0	0	0	0	160	204	74	28	30	0	0	307	307	
14	Metawe	296	0	160	33	7	96	0	0	0	0	160	33	7	96	0	0	0	24154	496	
15	Ganabit Elhebel West	325	286	10	10	12	7	0	0	0	0	286	10	10	12	7	0	0	13038	12568	
16	Elshekh Branch	524	367	101	38	0	18	0	0	0	0	367	101	38	0	18	0	0	26711	26414	
17	Elkarnak East	1940	978	564	88	31	279	0	0	0	0	978	564	88	31	279	0	0	94265	92607	
18	Ganabit Elkarnak East	1190	672	211	121	18	168	0	0	0	0	672	211	121	18	168	0	0	57139	1190	
19	Elroda	188	35	0	0	0	0	0	0	0	0	188	35	0	0	170	0	0	12198	240	
20	Eloxour	3407	2372	715	156	22	142	0	0	0	0	2372	715	156	22	142	0	0	173316	325	
21	Ganabit Elkarnak West	1333	994	232	37	4	126	0	0	0	0	984	232	37	4	126	0	0	69919	13933	
22	Ganabit Elkarnak (1)	153	105	15	10	1	22	0	0	0	0	105	15	10	1	22	0	0	748	153	
23	Ganabit Elkarnak (2)	623	369	145	15	2	92	0	0	0	0	369	145	15	2	92	0	0	30502	623	
24	Ganabit Elkarnak (3)	119	78	20	5	0	16	0	0	0	0	78	20	5	0	16	0	0	5855	119	
25	Eloxour Branch 1	253	80	111	48	0	14	0	0	0	0	80	111	48	0	14	0	0	12477	12150	
26	Eloxour Branch 2	368	279	54	5	0	30	0	0	0	0	279	54	5	0	30	0	0	18586	18437	
27	Eloxour Branch 3	249	189	37	0	1	22	0	0	0	0	189	37	0	1	22	0	0	12555	12446	
28	Sahel Eljeshy	1172	552	229	100	155	136	0	0	0	0	552	229	100	155	136	0	0	55513	1172	
29	Elzena	242	23	95	40	30	54	0	0	0	0	23	95	40	30	54	0	0	10769	10490	
30	Eloxour Branch 4	20	189	5	0	46	0	0	0	0	0	189	5	0	46	0	0	0	12688	242	
31	Eloxour Branch 5	322	264	35	16	0	0	0	0	0	0	264	35	16	0	7	0	0	16595	322	
32	Eloxour Branch 6	123	123	0	0	0	0	0	0	0	0	123	0	0	0	0	0	0	6458	123	
33	Elsaida	330	171	86	10	12	51	0	0	0	0	171	86	10	12	51	0	0	15920	330	
34	Eloxour Branch 7	485	449	14	0	0	22	0	0	0	0	449	14	0	0	22	0	0	25008	24967	
35	Elodesy	144	90	24	0	6	24	0	0	0	0	90	24	0	6	24	0	0	6958	144	
36	Elwattia	1851	674	319	89	164	0	0	0	0	674	605	319	89	164	0	0	89421	1851		
37	Elalia	487	167	135	104	8	73	0	0	0	0	167	135	104	8	73	0	0	23101	22704	
38	Elwelab	222	96	16	60	7	43	0	0	0	0	96	16	60	7	43	0	0	10310	222	
39	Syalt Baran	101	0	76	18	1	6	0	0	0	0	76	18	1	6	0	0	0	4899	101	
40	Nile	623	235	81	48	241	18	0	0	0	0	235	81	48	241	18	0	0	28345	623	
41	Ground Water	727	198	322	48	5	154	0	0	0	0	198	322	48	5	154	0	0	34140	727	
42	Elklabia	94	0	71	0	10	13	0	0	0	0	71	0	10	13	0	0	0	4388	94	
43	Elbiadia	7	0	7	0	0	0	0	0	0	0	7	0	0	0	0	0	0	353	7	
	Check Sums:		29317	15520	8107	1917	1208	2565	0	0	0	0	15520	8107	1917	1208	2565	0	0	1441981	29317
	Check Sums:																0	0	29317	29317	

Table 6-4. (Continued).

Check Sums:

Table 6-4. (Continued).

Current and Expected Cropping Pattern in Luxor Irrigation District (2000)

Period	Canal	No	Name	Area (Fed.)										Water Requirements (m^3/dy)						Check Sums			
				Total	Sugar	Maiza	Sesai	Gard	Other	VeCRI	Wheat	Fallow	Sugar	Maiza	Sesai	Gard	Other	VeCRI	Wheat	Fallow	0 - 2 wks	2 - 4 wks	Check Sums
1	Elmala	1519	983	325	35	99	77	0	0	0	983	325	35	99	77	0	0	0	0	0	69612	59402	1519
2	Eislamia - South	104	2	40	30	25	7	0	0	0	2	40	30	25	7	0	0	0	0	0	3802	2197	104
3	Sahel Elshaab	95	71	5	0	19	0	0	0	0	71	5	0	19	0	0	0	0	0	0	4603	4257	95
4	Sahel Elodisat	781	547	29	0	186	19	0	0	0	547	29	0	186	19	0	0	0	0	0	37292	34681	781
5	Eislamia - North	1418	525	689	75	23	106	0	0	0	525	689	75	23	106	0	0	0	0	0	56802	40325	1418
6	Canabit Elbotstan	425	159	213	25	8	20	0	0	0	159	213	25	8	20	0	0	0	0	0	17073	11963	425
7	Elhosha	1428	836	486	10	1	85	0	0	0	836	496	10	1	85	0	0	0	0	0	62792	50741	1428
8	Elhebel Main	1193	520	462	116	28	67	0	0	0	520	462	116	28	67	0	0	0	0	0	50606	36689	1193
9	Elhebel East	1212	547	551	32	26	56	0	0	0	547	551	32	26	56	0	0	0	0	0	50259	37481	1212
10	Gnabit Elhebel East	701	393	264	18	4	22	0	0	0	393	264	18	4	22	0	0	0	0	0	30586	24027	701
11	Elalia New	1368	585	436	116	64	167	0	0	0	585	436	116	64	167	0	0	0	0	0	61059	47858	1368
12	Elawima	307	4	167	52	35	49	0	0	0	4	167	52	35	49	0	0	0	0	0	5973	307	307
13	Elqabia	486	160	204	74	28	30	0	0	0	160	204	74	28	30	0	0	0	0	0	19988	13677	496
14	Metawe	980	160	233	7	30	0	0	0	0	160	233	7	30	0	0	0	0	0	0	9876	5862	296
15	Ganabit Elhebel West	325	286	10	12	7	0	0	0	0	286	10	12	7	0	0	0	0	0	0	16436	15089	325
16	Elshekh Branch	524	367	101	38	0	18	0	0	0	367	101	38	0	18	0	0	0	0	0	24642	20642	524
17	Elkarnak East	1940	978	564	88	31	279	0	0	0	978	564	88	31	279	0	0	0	0	0	83236	67006	1940
18	Ganabit Elkarnak East	1190	672	211	121	18	168	0	0	0	672	211	121	18	168	0	0	0	0	0	53263	43799	1190
19	Eiroda	240	188	35	0	0	17	0	0	0	188	35	0	0	17	0	0	0	0	0	11537	10297	240
20	Eloxour	3407	2372	715	156	22	142	0	0	0	2372	715	156	22	142	0	0	0	0	0	159148	134434	3407
21	Ganabit Elkarnak West	1333	994	232	37	4	126	0	0	0	994	232	37	4	126	0	0	0	0	0	65379	56904	1393
22	Ganabit Elkarnak (1)	153	105	15	10	1	22	0	0	0	105	15	10	1	22	0	0	0	0	0	7173	6273	153
23	Ganabit Elkarnak (2)	623	369	145	15	2	92	0	0	0	369	145	15	2	92	0	0	0	0	0	27698	23350	623
24	Ganabit Elkarnak (3)	119	78	20	5	0	16	0	0	0	78	20	5	0	16	0	0	0	0	0	5466	4701	119
25	Eloxour Branch 1	253	80	111	48	0	14	0	0	0	80	111	48	0	14	0	0	0	0	0	10177	6596	253
26	Eloxour Branch 2	368	279	54	5	0	30	0	0	0	279	54	5	0	30	0	0	0	0	0	17554	15535	368
27	Eloxour Branch 3	249	189	37	0	1	22	0	0	0	189	37	0	1	22	0	0	0	0	0	11856	10565	249
28	Sahel Elieshy	1172	552	229	100	155	136	0	0	0	562	229	100	155	136	0	0	0	0	0	50765	41653	1172
29	Eizena	242	23	95	40	30	54	0	0	0	23	95	40	30	54	0	0	0	0	0	8806	5762	242
30	Eloxour Branch 4	260	189	20	5	0	46	0	0	0	189	20	5	0	46	0	0	0	0	0	12289	11134	260
31	Eloxour Branch 5	322	264	35	0	7	0	0	0	0	264	35	0	7	0	0	0	0	0	0	15867	13995	322
32	Eloxour Branch 6	123	123	0	0	0	0	0	0	0	123	0	0	0	0	0	0	0	0	0	6488	6089	123
33	Elsaida	330	171	86	10	12	51	0	0	0	171	86	10	12	51	0	0	0	0	0	14252	11771	330
34	Eloxour Branch 7	485	449	14	0	0	22	0	0	0	449	14	0	0	22	0	0	0	0	0	24743	23097	485
35	Elodesy	144	90	24	0	6	24	0	0	0	90	24	0	6	24	0	0	0	0	0	6504	5735	144
36	Elwatta	1851	674	605	319	89	164	0	0	0	674	605	319	89	164	0	0	0	0	0	76646	54533	1851
37	Elalia	487	167	135	104	8	73	0	0	0	167	135	104	8	73	0	0	0	0	0	20113	14213	487
38	Elweljab	222	96	16	60	7	43	0	0	0	96	16	60	7	43	0	0	0	0	0	9755	7483	222
39	Syalt Baran	101	0	76	18	1	6	0	0	0	0	76	18	1	6	0	0	0	0	0	3387	1499	101
40	Nile	623	235	81	48	241	18	0	0	0	235	81	48	241	18	0	0	0	0	0	26612	22589	623
41	Ground Water	727	198	322	48	5	154	0	0	0	198	322	48	5	154	0	0	0	0	0	27853	19764	727
42	Elkabia	94	0	71	0	10	13	0	0	0	0	71	0	10	13	0	0	0	0	0	3046	1695	94
43	Elbiadia	7	0	7	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	221	92	7
Check Sums:										Check Sums:										29317		29317	
APRP Water Policy Program										APRP Water Policy Program										29317		29317	

Table 6-4. (Continued).

Check Sums:

APRP Water Policy Program

Table 6-4. (Continued).

Current and Expected Cropping Pattern in Luxor Irrigation District (2000)

Period	Canal	No	Name	Area (Fed.)										Water Requirements (m^3/dy)						Check Sums			
				Total	Sugar	Maiza	Sesai	Gard	Other	VeCRI	Wheat	Fallow	Sugar	Maiza	Sesai	Gard	Other	VeCRI	Wheat	Fallow	0 - 2 wks	2 - 4 wks	Check Sums
1	Elmala	1519	983	325	35	99	77	0	0	0	983	325	35	99	77	0	0	0	0	0	54672	49709	1519
2	Eislamia - South	104	2	40	30	25	7	0	0	0	2	40	30	25	7	0	0	0	0	0	2079	1969	104
3	Sahel Elshaab	95	71	5	0	19	0	0	0	0	71	5	0	0	0	0	0	0	0	0	3881	3500	95
4	Sahel Elodisat	781	547	29	0	186	19	0	0	0	547	29	0	186	19	0	0	0	0	0	31588	28470	781
5	Eislamia - North	1418	525	689	75	23	106	0	0	0	525	689	75	23	106	0	0	0	0	0	38081	35342	1418
6	Canabit Elbotstan	425	159	213	25	8	20	0	0	0	159	213	25	8	20	0	0	0	0	0	11315	10517	425
7	Elhosha	1428	836	486	10	1	85	0	0	0	836	496	10	1	85	0	0	0	0	0	47154	43147	1428
8	Elhebel Main	1193	520	462	116	28	67	0	0	0	520	462	116	28	67	0	0	0	0	0	34305	31683	1193
9	Elhebel East	1212	547	551	32	26	56	0	0	0	547	551	32	26	56	0	0	0	0	0	35212	32507	1212
10	Gnabit Elhebel East	701	393	264	18	4	22	0	0	0	393	264	18	4	22	0	0	0	0	0	22388	20544	701
11	Elalia New	1368	585	436	116	64	167	0	0	0	585	436	116	64	167	0	0	0	0	0	40876	37561	1368
12	Elawima	307	4	167	52	35	49	0	0	0	4	167	52	35	49	0	0	0	0	0	5774	5503	307
13	Elqabia	486	160	204	74	28	30	0	0	0	160	204	74	28	30	0	0	0	0	0	12852	11956	496
14	Metawe	296	160	160	33	7	96	0	0	0	160	160	33	7	96	0	0	0	0	0	5659	5363	296
15	Ganabit Elhebel West	325	286	10	12	7	0	0	0	0	286	10	12	7	0	0	0	0	0	0	13738	12392	325
16	Elshekh Branch	524	367	101	38	0	18	0	0	0	367	101	38	0	18	0	0	0	0	0	18973	17270	524
17	Elkarnak East	1940	978	564	88	31	279	0	0	0	978	564	88	31	279	0	0	0	0	0	62077	56782	1940
18	Ganabit Elkarnak East	1190	672	211	121	18	168	0	0	0	672	211	121	18	168	0	0	0	0	0	40249	36689	1190
19	Eiroda	240	188	35	0	0	17	0	0	0	188	35	0	0	17	0	0	0	0	0	9433	8539	240
20	Eloxour	3407	2372	715	156	22	142	0	0	0	2372	715	156	22	142	0	0	0	0	0	123685	112536	3407
21	Ganabit Elkarnak West	1333	994	232	37	4	126	0	0	0	994	232	37	4	126	0	0	0	0	0	52209	47365	1393
22	Ganabit Elkarnak (1)	153	105	15	10	1	22	0	0	0	105	15	10	1	22	0	0	0	0	0	5733	5195	153
23	Ganabit Elkarnak (2)	623	369	145	15	2	92	0	0	0	369	145	15	2	92	0	0	0	0	0	21526	19598	623
24	Ganabit Elkarnak (3)	119	78	20	5	0	16	0	0	0	78	20	5	0	16	0	0	0	0	0	4315	3919	119
25	Eloxour Branch 1	253	80	111	48	0	14	0	0	0	80	111	48	0	14	0	0	0	0	0	6224	5824	253
26	Eloxour Branch 2	368	279	54	5	0	30	0	0	0	279	54	5	0	30	0	0	0	0	0	14234	12893	368
27	Eloxour Branch 3	249	189	37	0	1	22	0	0	0	189	37	0	1	22	0	0	0	0	0	9681	8765	249
28	Sahel Ellesty	1172	552	229	100	155	136	0	0	0	562	229	100	155	136	0	0	0	0	0	38336	34963	1172
29	Eizena	242	23	95	40	30	54	0	0	0	23	95	40	30	54	0	0	0	0	0	5433	5078	242
30	Eloxour Branch 4	260	189	20	5	0	46	0	0	0	189	20	5	0	46	0	0	0	0	0	10163	9182	260
31	Eloxour Branch 5	322	264	35	0	7	0	0	0	0	264	35	0	7	0	0	0	0	0	0	12793	11585	322
32	Eloxour Branch 6	123	123	0	0	0	0	0	0	0	123	0	0	0	0	0	0	0	0	0	5535	4982	123
33	Elsaida	330	171	86	10	12	51	0	0	0	171	86	10	12	51	0	0	0	0	0	10878	9925	330
34	Eloxour Branch 7	485	449	14	0	0	22	0	0	0	449	14	0	0	22	0	0	0	0	0	21027	18944	485
35	Elodesy	144	90	24	0	6	24	0	0	0	90	24	0	6	24	0	0	0	0	0	5263	4770	144
36	Elwatta	1851	674	605	319	89	164	0	0	0	674	605	319	89	164	0	0	0	0	0	50814	47026	1851
37	Elalia	487	167	135	104	8	73	0	0	0	167	135	104	8	73	0	0	0	0	0	13196	12211	487
38	Elweljab	222	96	16	60	7	43	0	0	0	96	16	60	7	43	0	0	0	0	0	6834	6257	222
39	Syalt Baran	101	0	76	18	1	6	0	0	0	0	76	18	1	6	0	0	0	0	0	1519	1499	101
40	Nile	623	235	81	48	241	18	0	0	0	235	81	48	241	18	0	0	0	0	0	20701	18812	623
41	Ground Water	727	198	322	48	5	154	0	0	0	198	322	48	5	154	0	0	0	0	0	18632	17287	727
42	Elkabia	94	0	71	0	10	13	0	0	0	0	71	0	10	13	0	0	0	0	0	1638	1618	94
43	Elbiadia	7	0	7	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	98	98	7
	Check Sums:																			29317	29317		
	Check Sums:																			29317	29317		
																				29317	29317		

Table 6-4. (Continued).

Current and Expected Cropping Pattern in Luxor Irrigation District (2000)

Period	19	Area (Fed.)	Water Requirements (m³/dy)										Check Sums											
			Expected pattern																					
No	Name	Total	Sugar	Maiza	Sesai	Gard	Other	VeCRI	Wheat	Fallow	Sugar	Maiza	Sesai	Gard	Other	VeCRI	Wheat	Fallow	0 - 2 wks	2 - 4 wks	Existing	Expected		
1	Elmala	1519	983	160	0	99	35	0	0	0	242	983	80	0	99	50	0	0	0	307	45834	40212	1519	
2	Elsiamia - South	104	2	20	0	25	0	0	0	0	5	2	10	0	25	12	0	0	0	55	1090	1133	104	
3	Sahel Elshaab	95	71	0	0	19	0	0	0	0	24	547	8	0	186	40	0	0	0	1	3430	3139	95	
4	Sahel Elodisat	781	547	14	0	186	10	0	0	0	24	547	8	0	186	40	0	0	0	1	28029	25535	781	
5	Elsiamia - North	1418	525	340	0	23	50	0	0	0	480	525	150	0	23	55	0	0	0	665	27973	22848	1418	
6	Canabit Elbotstan	425	159	105	0	8	10	0	0	0	143	159	50	0	8	13	0	0	0	195	8399	6927	425	
7	Elhosha	1428	836	240	0	1	40	0	0	0	311	836	120	0	1	32	0	0	0	439	38271	32530	1428	
8	Elhebel Main	1193	520	230	0	28	35	0	0	0	380	520	100	0	28	50	0	0	0	499	25992	21983	1193	
9	Elhebel East	1212	547	275	0	26	25	0	0	0	339	547	130	0	26	28	0	0	0	481	27402	22823	1212	
10	Gnabit Elhebel East	701	393	132	0	4	11	0	0	0	161	393	60	0	4	12	0	0	0	576	18163	15365	701	
11	Elalia New	1368	585	118	0	64	80	0	0	0	521	585	55	0	64	88	0	0	0	184	29268	25491	1368	
12	Elawima	307	4	85	0	35	22	0	0	0	161	4	50	0	35	34	0	0	0	307	2936	2525	307	
13	Elqabia	486	160	100	0	28	15	0	0	0	193	160	40	0	28	30	0	0	0	238	9080	7728	496	
14	Metawe	296	0	80	0	7	48	0	0	0	161	0	40	0	7	41	0	0	0	208	2553	1674	296	
15	Ganabit Elhebel West	325	286	0	0	12	0	0	0	0	27	286	0	0	12	4	0	0	0	232	11933	10698	325	
16	Elshekh Branch	524	367	50	0	0	10	0	0	0	97	367	25	0	11	0	0	0	121	15819	13812	524		
17	Elkarnak East	1940	978	280	0	31	139	0	0	0	521	978	120	0	31	120	0	0	0	691	47760	40422	1940	
18	Ganabit Elkarnak East	1190	672	105	0	18	85	0	0	0	310	672	50	0	18	80	0	0	0	370	31387	27179	1190	
19	Elroda	240	188	18	0	0	8	0	0	0	161	188	9	0	0	7	41	0	0	0	39	8071	6985	240
20	Eloxour	3407	2372	355	0	22	70	0	0	0	568	2372	170	0	22	82	0	0	0	761	103469	90208	3407	
21	Ganabit Elkarnak West	1333	994	116	0	4	65	0	0	0	214	994	55	0	4	53	0	0	0	287	43661	37864	1393	
22	Ganabit Elkarnak (1)	153	105	7	0	1	10	0	0	0	30	105	0	0	1	6	0	0	0	41	4636	3942	153	
23	Ganabit Elkarnak (2)	623	369	70	0	2	45	0	0	0	137	369	35	0	2	35	0	0	0	182	17135	14622	623	
24	Ganabit Elkarnak (3)	119	78	10	0	0	8	0	0	0	23	78	5	0	4	0	0	0	32	3504	2969	119		
25	Eloxour Branch 1	253	80	50	0	7	0	0	0	0	116	80	25	0	12	0	0	0	136	4119	3503	253		
26	Eloxour Branch 2	368	279	25	0	0	16	0	0	0	48	279	12	0	12	0	0	0	65	12059	10485	368		
27	Eloxour Branch 3	249	189	20	0	1	11	0	0	0	28	189	10	0	1	5	0	0	0	44	8245	7084	249	
28	Sahel Ellesty	1172	552	110	0	155	65	0	0	0	290	562	55	0	155	96	0	0	0	314	30080	26844	1172	
29	Eizena	242	23	48	0	30	20	0	0	0	121	23	24	0	30	31	0	0	0	134	2990	2647	242	
30	Eloxour Branch 4	260	189	10	0	20	0	0	0	0	41	189	0	0	17	0	0	0	54	8306	7191	260		
31	Eloxour Branch 5	322	264	15	0	0	0	0	0	0	43	264	0	0	5	0	0	0	53	10902	9618	322		
32	Eloxour Branch 6	123	123	0	0	0	0	0	0	0	0	123	0	0	0	0	0	0	0	0	4982	4428	123	
33	Elsaida	330	171	40	0	12	25	0	0	0	82	171	20	0	12	22	0	0	0	105	8475	7248	330	
34	Eloxour Branch 7	485	449	0	0	10	0	0	0	0	26	449	0	0	4	0	0	0	32	18440	16255	485		
35	Elodesy	144	90	10	0	6	10	0	0	0	28	90	5	0	6	0	0	0	37	4216	3602	144		
36	Elwatta	1851	674	300	0	89	85	0	0	0	703	674	150	0	89	147	0	0	0	791	36268	32015	1851	
37	Elalia	487	167	60	0	8	35	0	0	0	217	167	30	0	8	52	0	0	0	230	8733	7822	487	
38	Elweljab	222	96	8	0	7	22	0	0	0	89	96	4	0	7	28	0	0	0	87	4767	4330	222	
39	Syalt Baran	101	0	35	0	1	0	0	0	0	65	0	17	0	1	5	0	0	0	78	519	378	101	
40	Nile	623	235	40	0	241	10	0	0	0	235	20	0	0	241	60	0	0	0	67	17361	16352	623	
41	Ground Water	727	198	115	0	5	75	0	0	0	334	198	57	0	5	60	0	0	0	407	11695	9421	727	
42	Elkabia	94	0	35	0	10	10	0	0	0	39	0	17	0	10	4	0	0	63	1038	588	94		
43	Elbiadia	7	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	7	0	0	7		
Check Sums:		29317	15520	3831	0	1208	1233	0	0	0	755	15520	1808	0	1208	1454	0	0	0	9327	748979	648425	29317	

Table 6-4. (Continued).

Current and Expected Cropping Pattern in Luxor Irrigation District (2000)

Period	Canal	No	Name	Area (Fed.)										Water Requirements (m^3/dy)						Check Sums								
				Total	Sugar	Maiza	Sesai	Gard	Other	Vegetable	Corn	Rice	Wheat	Fallow	Sugar	Maiza	Sesai	Gard	Other	Vegetable	Corn	Rice	Wheat	Fallow	0 - 2 wks	2 - 4 wks	Check Sums	
1	Elmala	1519	985	0	0	99	72	0	0	180	183	985	0	0	99	72	0	0	180	183	0	0	180	183	42027	37881	1519	
2	Elsiamia - South	104	13	0	0	25	23	0	0	20	3	13	0	0	25	23	0	0	20	23	0	0	20	23	1787	104	104	
3	Sahel Elshaab	95	71	0	0	19	2	0	0	0	0	0	0	0	19	2	0	0	0	0	3	0	0	0	0	3094	2707	95
4	Sahel Elodisat	781	539	0	0	186	10	0	0	20	26	539	0	0	186	10	0	0	20	26	24745	24745	781	781				
5	Elsiamia - North	1418	531	0	0	23	119	0	0	365	380	531	0	0	23	119	0	0	365	380	27210	26056	1418	1418				
6	Canabit Elbotstan	425	159	0	0	8	53	0	0	100	105	159	0	0	8	53	0	0	100	105	8450	8009	425	425				
7	Elhosha	1428	850	0	0	1	71	0	0	250	256	850	0	0	1	71	0	0	250	256	35523	32621	1428	1428				
8	Elhebel Main	1193	521	0	0	28	129	0	0	252	263	521	0	0	28	129	0	0	252	263	40460	36060	1193	1193				
9	Elhebel East	1212	547	0	0	26	106	0	0	267	266	547	0	0	26	106	0	0	267	266	26282	24640	1212	1212				
10	Gnabit Elhebel East	701	393	0	0	4	34	0	0	130	140	393	0	0	4	34	0	0	130	140	16731	15440	701	701				
11	Elalia New	1368	586	0	0	64	146	0	0	273	299	586	0	0	64	146	0	0	273	299	29660	27633	1368	1368				
12	Elawima	307	3	0	0	35	73	0	0	98	3	0	0	35	73	0	0	98	98	3962	4070	307	307					
13	Elqabia	496	160	0	0	28	52	0	0	126	130	160	0	0	28	52	0	0	126	130	9323	8933	496	496				
14	Metawe	296	0	0	7	110	0	0	137	142	0	0	7	110	0	0	137	142	4482	4765	296	296						
15	Ganabit Elhebel West	325	283	0	0	12	9	0	0	10	11	283	0	0	12	9	0	0	10	11	10835	9542	325	325				
16	Elshekh Branch	524	365	0	0	41	0	0	54	64	365	0	0	41	0	0	54	64	64	14782	13266	524	524					
17	Elkarnak East	1940	976	0	0	31	197	0	0	366	370	976	0	0	31	197	0	0	366	370	45225	41825	1940	1940				
18	Ganabit Elkarnak East	1190	681	0	0	18	80	0	0	206	205	681	0	0	18	80	0	0	206	205	29506	27086	1190	1190				
19	Eiroda	240	122	0	0	0	39	0	0	39	40	122	0	0	0	39	0	0	39	40	5791	5307	240	240				
20	Eloxour	3407	2324	0	0	22	282	0	0	370	409	2324	0	0	22	282	0	0	370	409	95507	85846	3407	3407				
21	Ganabit Elkarnak West	1333	912	0	0	4	104	0	0	181	192	912	0	0	4	104	0	0	181	192	37678	34082	1393	1393				
22	Ganabit Elkarnak (1)	153	105	0	0	1	7	0	0	20	20	105	0	0	1	7	0	0	20	20	4228	3822	153	153				
23	Ganabit Elkarnak (2)	623	380	0	0	2	24	0	0	102	115	380	0	0	2	24	0	0	102	115	15617	14292	623	623				
24	Ganabit Elkarnak (3)	119	78	0	0	6	6	0	0	17	18	78	0	0	6	6	0	0	17	18	3168	2876	119	119				
25	Eloxour Branch 1	253	80	0	0	67	0	0	51	55	80	0	0	67	0	0	51	55	5074	4753	253	253						
26	Eloxour Branch 2	368	280	0	0	15	0	0	33	40	280	0	0	0	15	0	0	33	40	10854	9703	368	368					
27	Eloxour Branch 3	249	206	0	0	1	14	0	0	14	14	206	0	0	1	14	0	0	14	14	7944	7037	249	249				
28	Sahel Ellesty	1172	517	0	0	152	129	0	0	183	191	517	0	0	152	129	0	0	183	191	27889	25529	1172	1172				
29	Eizena	242	23	0	0	30	38	0	0	76	75	23	0	0	30	38	0	0	76	75	3468	3502	242	242				
30	Eloxour Branch 4	260	187	0	0	13	0	0	30	187	0	0	0	13	0	0	30	187	0	0	7422	6679	260	260				
31	Eloxour Branch 5	322	255	0	0	19	0	0	24	24	255	0	0	0	19	0	0	24	24	9927	8834	322	322					
32	Eloxour Branch 6	123	118	0	0	5	0	0	0	0	118	0	0	0	5	0	0	0	0	0	4362	3817	123	123				
33	Elsaida	330	173	0	0	12	86	0	0	28	31	173	0	0	12	86	0	0	28	31	8863	7928	330	330				
34	Eloxour Branch 7	485	451	0	0	24	0	0	5	5	451	0	0	0	24	0	0	5	5	16848	14772	485	485					
35	Elodesy	144	52	0	0	6	22	0	0	32	52	52	0	0	6	22	0	0	32	32	2948	2777	144	144				
36	Elwatta	1851	607	0	0	89	152	0	0	500	503	607	0	0	89	152	0	0	500	503	34180	32985	1851	1851				
37	Elalia	487	229	0	0	8	57	0	0	94	99	229	0	0	8	57	0	0	94	99	10982	10188	487	487				
38	Elweljab	222	99	0	0	7	39	0	0	39	38	99	0	0	7	39	0	0	39	38	5145	4742	222	222				
39	Syalt Baran	101	0	0	1	29	0	0	32	39	0	0	0	1	29	0	0	32	39	1106	1164	101	101					
40	Nile	623	201	0	0	241	47	0	0	62	72	201	0	0	241	47	0	0	62	72	15366	13827	623	623				
41	Ground Water	727	183	0	0	5	10	0	0	230	237	183	0	0	5	10	0	0	230	237	11368	11374	727	727				
42	Elkabia	94	20	0	0	10	4	0	0	30	30	20	0	0	10	4	0	0	30	30	1464	1466	94	94				
43	Elbiadia	7	0	0	0	3	0	0	0	2	0	0	0	0	3	0	0	0	2	0	95	95	7	7				
Check Sums:				29317	15265	0	0	1205	2624	0	0	5048	5175	15265	0	0	1205	2624	0	0	5048	5175	29317	29317				
Check Sums:				29317	29317	29317	29317	29317	29317	29317	29317	29317	29317	29317	29317	29317	29317	29317	29317	29317	29317	29317	29317	29317				

Table 6-4. (Continued).

Current and Expected Cropping Pattern in Luxor Irrigation District (2000)

Period	Canal	No.	Name	Area (Fed.)										Water Requirements (m^3/dy)						Check Sums				
				Total	Sugar	Maiza	Sesai	Gard	Other	Vegetable	Corn	Rice	Wheat	Fallow	Sugar	Maiza	Sesai	Gard	Other	Vegetable	Corn	Rice	Wheat	Fallow
1	Elmala	1519	985	0	0	99	72	0	0	180	183	985	0	0	99	72	0	0	262	101	35896	35388	1519	1519
2	Elsiamia - South	104	13	0	0	25	23	0	0	20	13	0	0	25	23	0	0	28	15	1761	1702	104	104	
3	Sahel Elshaab	95	71	0	0	19	2	0	0	0	3	0	0	19	2	0	0	0	3	2564	2320	95	95	
4	Sahel Elodisat	781	539	0	0	186	10	0	0	20	26	539	0	0	186	10	0	0	27	19	20662	18794	781	781
5	Elsiamia - North	1418	531	0	0	23	119	0	0	365	380	531	0	0	23	119	0	0	476	269	24985	24291	1418	1418
6	Canabit Elbotstan	425	159	0	0	8	53	0	0	100	105	159	0	0	8	53	0	0	144	61	7689	7533	425	425
7	Elhosha	1428	850	0	0	1	71	0	0	250	256	850	0	0	1	71	0	0	352	154	30908	29337	1428	1428
8	Elhebel Main	1193	521	0	0	28	129	0	0	252	263	521	0	0	28	129	0	0	361	154	22255	21193	1193	1193
9	Elhebel East	1212	547	0	0	26	106	0	0	267	266	547	0	0	26	106	0	0	401	132	23538	22974	1212	1212
10	Gnabit Elhebel East	701	393	0	0	4	34	0	0	130	140	393	0	0	4	34	0	0	195	75	14648	14068	701	701
11	Elalia New	1368	586	0	0	64	146	0	0	273	299	586	0	0	64	146	0	0	363	209	26451	25252	1368	1368
12	Elawima	307	3	0	0	35	73	0	0	98	3	0	0	35	73	0	0	140	56	4064	4233	307	307	
13	Elqabia	496	160	0	0	28	52	0	0	126	130	160	0	0	28	52	0	0	177	79	8610	8479	496	496
14	Metawe	296	7	0	0	110	0	0	0	137	142	0	0	7	110	0	0	160	19	4765	4787	296	296	
15	Ganabit Elhebel West	325	283	0	0	12	9	0	0	10	11	283	0	0	12	9	0	0	14	7	8972	8172	325	325
16	Elshekh Branch	524	365	0	0	41	0	0	0	54	64	365	0	0	41	0	0	0	74	44	12530	11617	524	524
17	Elkarnak East	1940	976	0	0	31	197	0	0	366	370	976	0	0	31	197	0	0	540	196	39888	38281	1940	1940
18	Ganabit Elkarnak East	1190	681	0	0	18	80	0	0	206	205	681	0	0	18	80	0	0	305	106	25713	24522	1190	1190
19	Elroda	240	122	0	0	0	39	0	0	39	40	122	0	0	0	39	0	0	60	19	5061	4837	240	240
20	Eloxour	3407	2324	0	0	22	282	0	0	370	409	2324	0	0	22	282	0	0	403	376	81161	74469	3407	3407
21	Ganabit Elkarnak West	1333	912	0	0	4	104	0	0	181	192	912	0	0	4	104	0	0	269	104	32243	30286	1393	1393
22	Ganabit Elkarnak (1)	153	105	0	0	1	7	0	0	20	20	105	0	0	1	7	0	0	28	12	3611	3375	153	153
23	Ganabit Elkarnak (2)	623	380	0	0	2	24	0	0	102	115	380	0	0	2	24	0	0	142	75	13526	12785	623	623
24	Ganabit Elkarnak (3)	119	78	0	0	6	6	0	0	17	18	78	0	0	6	6	0	0	25	10	2719	2562	119	119
25	Eloxour Branch 1	253	80	0	0	67	0	0	51	55	80	0	0	67	0	0	76	30	4592	4470	253	253		
26	Eloxour Branch 2	368	280	0	0	15	0	0	33	40	280	0	0	15	0	0	45	28	9136	8435	368	368		
27	Eloxour Branch 3	249	206	0	0	1	14	0	0	14	14	206	0	0	1	14	0	0	20	8	6622	6071	249	249
28	Sahel Ellesty	1172	517	0	0	152	129	0	0	183	191	517	0	0	152	129	0	0	270	104	24487	23264	1172	1172
29	Eizena	242	23	0	0	30	38	0	0	76	75	23	0	0	30	38	0	0	106	45	3466	3536	242	242
30	Eloxour Branch 4	260	187	0	0	13	0	0	30	187	0	0	13	0	0	42	18	6302	5864	260	260			
31	Eloxour Branch 5	322	255	0	0	19	0	0	24	24	255	0	0	19	0	0	36	12	8320	7678	322	322		
32	Eloxour Branch 6	123	118	0	0	5	0	0	0	0	118	0	0	5	0	0	0	0	0	3579	3238	123	123	
33	Elsaida	330	173	0	0	12	86	0	0	28	31	173	0	0	12	86	0	0	41	18	7579	7024	330	330
34	Eloxour Branch 7	485	451	0	0	24	0	0	5	5	451	0	0	24	0	0	7	3	13863	12570	485	485		
35	Elodesy	144	52	0	0	6	22	0	0	32	52	50	0	0	6	22	0	0	48	16	2672	2618	144	144
36	Elwatta	1851	607	0	0	89	152	0	0	500	503	607	0	0	89	152	0	0	742	261	31761	31804	1851	1851
37	Elalia	487	229	0	0	8	57	0	0	94	99	229	0	0	8	57	0	0	131	62	9726	9305	487	487
38	Elweljab	222	99	0	0	7	39	0	0	39	38	99	0	0	7	39	0	0	54	23	4542	4316	222	222
39	Syalt Baran	101	0	0	1	29	0	0	32	39	0	0	0	1	29	0	0	47	24	1164	1246	101	101	
40	Nile	623	201	0	0	241	47	0	0	62	72	201	0	0	241	47	0	0	90	44	13422	12507	623	623
41	Ground Water	727	183	0	0	5	10	0	0	230	237	183	0	0	5	72	0	0	341	126	11360	727	185	185
42	Elkabia	94	20	0	0	10	4	0	0	30	30	20	0	0	10	4	0	0	36	24	1426	1402	94	94
43	Elbiadia	7	0	0	0	3	0	0	0	2	0	0	0	0	3	0	0	0	2	2	95	90	7	7
Check Sums:				29317	15265	0	0	1205	2624	0	0	5048	5175	15265	0	0	1205	2624	0	0	7080	3143	29317	29317

Table 6-4. (Continued).

No	Name	Canal	Period	Current and Expected Cropping Pattern in Luxor Irrigation District (2000)												Water Requirements (m³/dy)				
				Existing pattern				Expected pattern				Fallow				0 - 2 wks		2 - 4 wks		
				Total	Sugar	Maize	Sesai	Gard	Other	Vegetable	Cereals	Wheat	Fallow	Sugar	Maize	Sesai	Gard	Other	Vegetable	Cereals
1	Elmala	1519	890	0	0	99	72	0	0	322	136	800	0	0	99	72	0	0	363	185
2	Elsiamia - South	104	12	0	0	25	23	0	0	40	4	11	0	0	25	23	0	0	43	2
3	Sahel Elshaab	95	64	0	0	19	2	0	0	3	7	0	0	19	2	0	0	3	44	
4	Sahel Elodisat	781	485	0	0	186	10	0	0	39	61	435	0	0	186	10	0	0	46	104
5	Elsiamia - North	1418	485	0	0	23	119	0	0	676	115	435	0	0	23	119	0	0	745	95
6	Canabit Elbotstan	425	143	0	0	8	53	0	0	195	26	130	0	0	8	53	0	0	205	29
7	Elhosha	1428	765	0	0	1	71	0	0	506	85	680	0	0	1	71	0	0	506	170
8	Elhebal Main	1193	475	0	0	28	129	0	0	500	61	425	0	0	28	129	0	0	515	1193
9	Elhebal East	1212	497	0	0	26	106	0	0	516	67	443	0	0	26	106	0	0	533	1212
10	Gnabit Elhebel East	701	353	0	0	4	34	0	0	210	100	315	0	0	4	34	0	0	270	78
11	Elalia New	1368	528	0	0	64	146	0	0	475	155	475	0	0	64	146	0	0	573	1368
12	Elawima	307	2	0	0	35	73	0	0	192	5	2	0	0	35	73	0	0	196	1
13	Elqabia	486	145	0	0	28	52	0	0	230	41	130	0	0	28	52	0	0	256	30
14	Metawe	296	0	0	7	110	0	0	170	9	0	0	0	7	110	0	0	179	0	
15	Ganabit Elhebel West	325	255	0	0	12	9	0	0	21	28	230	0	0	12	9	0	0	21	53
16	Elshekh Branch	524	330	0	0	41	0	0	0	100	53	300	0	0	41	0	0	0	118	65
17	Elkarnak East	1940	878	0	0	31	197	0	0	722	112	790	0	0	31	197	0	0	736	186
18	Ganabit Elkarnak East	1190	611	0	0	18	80	0	0	406	75	540	0	0	18	80	0	0	411	141
19	Elroda	615	0	0	0	39	0	0	0	72	14	98	0	0	39	0	0	0	79	24
20	Eloxour	3407	2090	0	0	22	282	0	0	766	247	1870	0	0	22	282	0	0	779	454
21	Ganabit Elkarnak West	1333	882	0	0	4	104	0	0	373	30	790	0	0	4	104	0	0	373	122
22	Ganabit Elkarnak (1)	153	95	0	0	1	7	0	0	38	12	85	0	0	1	7	0	0	40	20
23	Ganabit Elkarnak (2)	623	342	0	0	2	24	0	0	209	46	305	0	0	2	24	0	0	217	75
24	Ganabit Elkarnak (3)	119	71	0	0	6	0	0	35	7	65	0	0	6	0	0	0	35	13	
25	Eloxour Branch 1	253	72	0	0	67	0	0	106	8	64	0	0	67	0	0	0	106	16	
26	Eloxour Branch 2	368	250	0	0	15	0	0	73	30	220	0	0	15	0	0	0	73	60	
27	Eloxour Branch 3	249	186	0	0	1	14	0	0	28	20	165	0	0	1	14	0	0	28	41
28	Sahel Ellesty	1172	467	0	0	152	129	0	0	369	55	415	0	0	152	129	0	0	374	102
29	Elzena	242	21	0	0	30	38	0	0	142	11	19	0	0	30	38	0	0	151	4
30	Eloxour Branch 4	260	170	0	0	13	0	0	0	60	17	153	0	0	13	0	0	0	60	34
31	Eloxour Branch 5	322	230	0	0	19	0	0	48	25	205	0	0	19	0	0	0	48	50	
32	Eloxour Branch 6	123	108	0	0	5	0	0	0	10	100	0	0	5	0	0	0	10	18	
33	Elsaida	330	156	0	0	12	86	0	0	59	17	140	0	0	12	86	0	0	59	33
34	Eloxour Branch 7	485	406	0	0	24	0	0	10	45	369	0	0	24	0	0	0	10	82	
35	Elodesy	144	47	0	0	6	22	0	0	64	5	42	0	0	6	22	0	0	64	10
36	Elwatta	185	547	0	0	89	152	0	0	989	74	485	0	0	89	152	0	0	1003	122
37	Elalia	487	210	0	0	8	57	0	0	186	26	186	0	0	8	57	0	0	193	43
38	Elweljab	222	90	0	0	7	39	0	0	78	8	81	0	0	7	39	0	0	78	17
39	Syalt Baran	101	0	0	1	29	0	0	71	0	0	0	0	1	29	0	0	71	0	
40	Nile	623	180	0	0	241	47	0	0	128	27	160	0	0	241	47	0	0	135	40
41	Ground Water	727	165	0	0	5	72	0	0	32	147	0	0	5	72	0	0	467	36	
42	Elkabia	94	18	0	0	10	4	0	0	60	2	16	0	0	10	4	0	0	60	4
43	Elbiadia	7	0	0	0	3	0	0	0	3	1	0	0	0	3	0	0	0	4	
Check Sums:				29317	13836	0	0	1205	2624	0	0	9743	1909	12348	0	0	1205	2624	0	0
Check Sums:				29317	29317	29317	29317	29317	29317	29317	29317	29317	29317	29317	29317	29317	29317	29317	29317	

Table 6-4. (Continued).

Current and Expected Cropping Pattern in Luxor Irrigation District (2000)

Period	Canal	No.	Name	Area (Fed.)										Water Requirements (m³/dy)						Check Sums				
				Total	Sugar	Maiza	Sesai	Gard	Other	Ve	CRI	Wheat	Fallow	Sugar	Maiza	Sesai	Gard	Other	Ve	CRI	Wheat	Fallow	0 - 2 wks	2 - 4 wks
1	Elmala	1519	800	0	0	99	72	0	0	363	185	690	0	0	99	72	0	0	363	295	21204	17870	1519	1519
2	Elsiamia - South	104	11	0	0	25	23	0	0	43	2	9	0	0	25	23	0	0	43	4	1600	1479	104	104
3	Sahel Elshaab	95	57	0	0	19	2	0	0	3	14	50	0	0	19	2	0	0	3	4	1331	1071	95	95
4	Sahel Elodisat	781	435	0	0	186	10	0	0	46	104	375	0	0	186	10	0	0	46	164	11119	8991	781	781
5	Elsiamia - North	1418	435	0	0	23	119	0	0	745	96	370	0	0	23	119	0	0	745	161	20349	18614	1418	1418
6	Canabit Elbotstan	425	130	0	0	8	53	0	0	205	29	110	0	0	8	53	0	0	205	49	6159	5559	425	425
7	Elhosha	1428	680	0	0	1	71	0	0	506	170	595	0	0	1	71	0	0	506	255	200000	17271	1428	1428
8	Elhebel Main	1193	425	0	0	28	129	0	0	515	96	360	0	0	28	129	0	0	515	161	1193	1193	1193	1193
9	Elhebel East	1212	443	0	0	26	106	0	0	533	104	375	0	0	26	106	0	0	533	172	1719	15241	1212	1212
10	Gnabit Elhebel East	701	315	0	0	4	34	0	0	270	78	280	0	0	4	34	0	0	270	113	9506	8574	701	701
11	Elalia New	1368	475	0	0	64	146	0	0	573	110	410	0	0	64	146	0	0	573	175	19253	17470	1368	1368
12	Elawima	307	2	0	0	35	73	0	0	196	1	2	0	0	35	73	0	0	196	1	4749	4587	307	307
13	Elqabia	486	130	0	0	28	52	0	0	256	30	115	0	0	28	52	0	0	256	45	6681	496	496	496
14	Metawe	296	0	0	7	110	0	0	179	0	0	0	0	7	110	0	0	179	0	4691	4583	296	296	
15	Ganabit Elhebel West	325	230	0	0	12	9	0	0	21	53	200	0	0	12	9	0	0	21	83	4420	3484	325	325
16	Elshekh Branch	524	300	0	0	41	0	0	118	65	285	0	0	0	41	0	0	118	110	7207	5981	524	524	
17	Elkarnak East	1940	790	0	0	31	197	0	0	736	186	700	0	0	31	197	0	0	736	276	27695	24507	1940	1940
18	Ganabit Elkarnak East	1190	540	0	0	18	80	0	0	411	141	475	0	0	18	80	0	0	411	206	16660	14488	1190	1190
19	Elroda	29	110	0	0	39	0	0	72	19	85	0	0	39	0	0	0	79	0	3512	2923	240	240	
20	Eloxour	3407	2090	0	0	22	282	0	0	766	247	1630	0	0	22	282	0	0	779	694	50583	39358	3407	3407
21	Ganabit Elkarnak West	1333	882	0	0	4	104	0	0	373	30	630	0	0	4	104	0	0	373	282	21784	16224	1393	1393
22	Ganabit Elkarnak (1)	153	95	0	0	1	7	0	0	38	12	70	0	0	1	7	0	0	40	35	2285	1713	153	153
23	Ganabit Elkarnak (2)	623	342	0	0	2	24	0	0	209	46	275	0	0	2	24	0	0	217	105	9200	7545	623	623
24	Ganabit Elkarnak (3)	119	71	0	0	6	6	0	0	35	7	50	0	0	6	6	0	0	35	28	1789	1334	119	119
25	Eloxour Branch 1	253	72	0	0	67	0	0	106	8	56	0	0	67	0	0	106	8	24	3822	3359	253	253	
26	Eloxour Branch 2	368	250	0	0	15	0	0	73	30	196	0	0	0	15	0	0	73	84	5422	4116	368	368	
27	Eloxour Branch 3	249	186	0	0	1	14	0	0	28	20	140	0	0	1	14	0	0	28	66	3698	2641	249	249
28	Sahel Elieshy	1172	467	0	0	152	129	0	0	369	55	360	0	0	152	129	0	0	374	157	17902	14942	1172	1172
29	Elzena	242	21	0	0	30	38	0	0	142	11	14	0	0	30	38	0	0	151	9	3445	3445	242	242
30	Eloxour Branch 4	260	170	0	0	13	0	0	60	17	130	0	0	0	13	0	0	60	57	3899	2961	260	260	
31	Eloxour Branch 5	322	230	0	0	19	0	0	48	25	180	0	0	0	19	0	0	48	75	4784	3574	322	322	
32	Eloxour Branch 6	123	108	0	0	5	0	0	0	10	83	0	0	0	5	0	0	0	35	1838	1255	123	123	
33	Elsaida	330	156	0	0	12	86	0	0	59	17	121	0	0	12	86	0	0	59	52	4964	4014	330	330
34	Eloxour Branch 7	485	406	0	0	24	0	0	10	45	315	0	0	0	24	0	0	10	136	7145	4988	485	485	
35	Elodesy	144	47	0	0	6	22	0	0	64	5	36	0	0	6	22	0	0	64	16	2194	1897	144	144
36	Elwatta	1851	547	0	0	89	152	0	0	989	74	425	0	0	89	152	0	0	1003	182	28079	24856	1851	1851
37	Elalia	487	210	0	0	8	57	0	0	186	26	160	0	0	8	57	0	0	193	69	7309	6111	487	487
38	Elweljab	222	90	0	0	7	39	0	0	78	8	70	0	0	7	39	0	0	78	28	3387	2850	222	222
39	Syalt Baran	101	0	0	1	29	0	0	71	0	0	0	0	1	29	0	0	71	0	1540	1498	101	101	
40	Nile	623	180	0	0	241	47	0	0	128	27	140	0	0	241	47	0	0	135	60	9785	8304	623	623
41	Ground Water	727	165	0	0	5	72	0	0	453	32	128	0	0	5	72	0	0	467	55	10887	9977	727	727
42	Elkabia	94	18	0	0	10	4	0	0	60	2	14	0	0	10	4	0	0	60	6	1455	1329	94	94
43	Elbiadia	7	0	0	0	3	0	0	0	3	1	0	0	0	3	0	0	0	4	0	94	98	7	7
Check Sums:				29317	13111	0	0	1205	2624	0	0	10139	2388	10679	0	0	1205	2624	0	0	10226	4583	29317	29317
Check Sums:				29317	13111	0	0	1205	2624	0	0	10139	2388	10679	0	0	1205	2624	0	0	10226	4583	29317	29317

Table 6-4. (Continued).

Current and Expected Cropping Pattern in Luxor Irrigation District (2000)

Period	Canal	No	Name	Area (Fed.)										Water Requirements (m^3/dy)						Check Sums						
				Total	Sugar	Maiza	Sesai	Gard	Other	Vegetable	Corn	Rice	Wheat	Fallow	Sugar	Maiza	Sesai	Gard	Other	Vegetable	Corn	Rice	Wheat	Fallow	0 - 2 wks	2 - 4 wks
1	Elmala	1519	690	0	0	99	72	0	0	363	295	590	0	0	99	72	0	0	363	295	17020	16927	1519	1519		
2	Elsiamia - South	104	9	0	0	25	23	0	0	43	4	8	0	0	25	23	0	0	43	5	1452	1541	104	104		
3	Sahel Elshaab	95	50	0	0	19	2	0	0	3	46	164	323	0	0	186	10	0	0	46	216	8551	963	95	95	
4	Sahel Elodisat	781	375	0	0	186	10	0	0	46	164	323	0	0	186	10	0	0	46	216	8241	781	781	781		
5	Elsiamia - North	1418	370	0	0	23	119	0	0	745	161	320	0	0	23	119	0	0	745	211	18100	19155	1418	1418		
6	Canabit Elbotstan	425	110	0	0	8	53	0	0	205	49	95	0	0	8	53	0	0	205	64	5394	5693	425	425		
7	Elhosha	1428	595	0	0	1	71	0	0	506	255	510	0	0	1	71	0	0	506	340	16532	16851	1428	1428		
8	Elhebel Main	1193	360	0	0	28	129	0	0	515	161	313	0	0	28	129	0	0	515	208	14731	15428	1193	1193		
9	Elhebel East	1212	375	0	0	26	106	0	0	533	112	328	0	0	26	106	0	0	533	219	14891	15619	1212	1212		
10	Gnabit Elhebel East	701	280	0	0	4	34	0	0	270	113	235	0	0	4	34	0	0	270	158	8225	8336	701	701		
11	Elalia New	1368	410	0	0	64	146	0	0	573	175	351	0	0	64	146	0	0	573	234	16890	17543	1368	1368		
12	Elawima	307	2	0	0	35	73	0	0	196	1	2	0	0	35	73	0	0	196	1	4531	4946	307	307		
13	Elqibbia	496	115	0	0	28	52	0	0	256	45	96	0	0	28	52	0	0	256	64	6510	6844	496	496		
14	Metawe	296	0	0	7	110	0	0	179	0	0	0	0	7	110	0	0	179	0	14894	15619	1212	1212			
15	Gnabit Elhebel West	325	200	0	0	12	9	0	0	21	83	170	0	0	12	9	0	0	21	113	3247	3047	325	325		
16	Elshekh Branch	524	255	0	0	41	0	0	0	118	110	220	0	0	0	41	0	0	0	118	145	5657	5630	524	524	
17	Elkarnak East	1940	700	0	0	31	197	0	0	736	276	595	0	0	31	197	0	0	736	391	23555	24055	1940	1940		
18	Ganabit Elkarnak East	1190	475	0	0	18	80	0	0	411	206	409	0	0	18	80	0	0	411	272	13881	14187	1190	1190		
19	Elroda	290	85	0	0	39	0	0	79	73	73	0	0	39	0	0	0	79	49	2796	2902	240	240			
20	Eloxour	3407	1630	0	0	22	282	0	0	779	694	1395	0	0	22	282	0	0	779	929	37220	37104	3407	3407		
21	Ganabit Elkarnak West	1393	630	0	0	4	104	0	0	373	292	547	0	0	4	104	0	0	373	365	15420	15576	1393	1393		
22	Ganabit Elkarnak (1)	153	70	0	0	1	7	0	0	40	35	61	0	0	1	7	0	0	40	44	1628	1649	153	153		
23	Ganabit Elkarnak (2)	623	275	0	0	2	24	0	0	217	105	228	0	0	2	24	0	0	217	152	7210	7242	623	623		
24	Ganabit Elkarnak (3)	119	50	0	0	6	0	0	35	28	47	0	0	6	0	0	0	35	31	1272	1343	119	119			
25	Eloxour Branch 1	253	56	0	0	67	0	0	106	24	48	0	0	67	0	0	0	106	32	3245	3428	253	253			
26	Eloxour Branch 2	368	196	0	0	15	0	0	73	84	168	0	0	0	15	0	0	73	112	3879	3806	368	368			
27	Eloxour Branch 3	249	140	0	0	1	14	0	0	28	66	120	0	0	1	14	0	0	28	86	2469	2373	249	249		
28	Sahel Ellest	1172	360	0	0	152	129	0	0	374	157	310	0	0	152	129	0	0	374	207	14432	14851	1172	1172		
29	Elzena	242	14	0	0	30	38	0	0	151	9	14	0	0	30	38	0	0	151	9	3401	3752	242	242		
30	Eloxour Branch 4	260	130	0	0	13	0	0	60	112	0	0	0	13	0	0	0	60	75	2801	2783	260	260			
31	Eloxour Branch 5	322	180	0	0	19	0	0	48	75	153	0	0	0	19	0	0	48	102	3333	3235	322	322			
32	Eloxour Branch 6	123	83	0	0	5	0	0	0	35	71	0	0	0	5	0	0	0	47	1156	1064	123	123			
33	Elsaida	330	121	0	0	12	86	0	0	59	52	104	0	0	12	86	0	0	59	69	3812	3852	330	330		
34	Eloxour Branch 7	485	315	0	0	24	0	0	10	136	271	0	0	0	24	0	0	10	180	4607	4302	485	485			
35	Elodesy	144	36	0	0	6	22	0	0	64	16	31	0	0	6	22	0	0	64	21	1839	1935	144	144		
36	Elwatta	1851	425	0	0	89	152	0	0	1003	182	364	0	0	89	152	0	0	1003	243	24254	25786	1851	1851		
37	Elalia	487	160	0	0	8	57	0	0	193	69	137	0	0	8	57	0	0	193	92	5884	6126	487	487		
38	Elweljab	222	70	0	0	7	39	0	0	78	28	60	0	0	7	39	0	0	78	38	2741	2835	222	222		
39	Syalt Baran	101	0	0	1	29	0	0	71	0	0	0	0	1	29	0	0	71	0	1477	1630	101	101			
40	Nile	623	140	0	0	241	47	0	0	135	60	120	0	0	241	47	0	0	135	80	8108	8261	623	623		
41	Ground Water	727	128	0	0	5	72	0	0	467	55	110	0	0	5	72	0	0	467	73	9776	10602	727	727		
42	Elkabia	94	14	0	0	10	4	0	0	60	6	12	0	0	10	4	0	0	60	8	1310	1408	94	94		
43	Elbiadia	7	0	0	0	3	0	0	4	0	0	0	0	3	0	0	0	4	0	0	94	107	7	7		
Check Sums:				29317	10679	0	0	1205	2624	0	0	10226	4583	9154	0	0	1205	2624	0	0	10226	6108	348916	357847	29317	29317

Table 6-4. (Continued).

Period	Canal	No	Name	Current and Expected Cropping Pattern in Luxor Irrigation District (2001)										Water Requirements (m³/3dy)		Check Sums														
				Total	Sugar	Maiza	Sesai	Gard	Other	Ve	Cd	Ri	Wheat	Fallow	Sugar	Maiza	Sesai	Gard	Other	Vd	Cd	Ri	Wheat	Fallow	0 - 2 wks	2 - 4 wks	Existing	Expected		
Area (Fed.)				Existing pattern										Expected pattern																
1	Elmala	156	Elmala	9	99	72	0	0	363	395	492	0	0	99	72	0	0	363	493	16927	17217	1519	1519	17217	1519	104	104			
2	Eislamia - South	104	8	0	0	25	23	0	0	43	5	6	0	0	25	23	0	0	43	7	1541	1758	104	104	1758	104	95	95		
3	Sahel Elshaab	95	43	0	0	19	2	0	0	3	28	35	0	0	19	2	0	0	3	36	963	909	8241	8241	8089	781	781	781		
4	Sahel Elodisat	781	323	0	0	186	10	0	0	46	216	270	0	0	186	10	0	0	46	269	19155	21387	1418	1418	19155	1418	425	425		
5	Eislamia - North	1418	320	0	0	23	119	0	0	745	211	265	0	0	23	119	0	0	745	266	19155	21387	1418	1418	19155	1418	425	425		
6	Canabit Elbotstan	425	95	0	0	8	53	0	0	205	64	80	0	0	8	53	0	0	205	79	5693	6342	17676	17676	1428	1428	1428	1428		
7	Elhosha	1428	510	0	0	1	71	0	0	506	340	425	0	0	1	71	0	0	506	425	15423	16859	1193	1193	16859	1193	7	7		
8	Elhebal Main	1193	313	0	0	28	129	0	0	515	208	260	0	0	28	129	0	0	515	261	15615	17072	1212	1212	17072	1212	1212	1212		
9	Elhebal East	1212	328	0	0	26	106	0	0	533	219	275	0	0	26	106	0	0	533	272	15615	17072	1212	1212	17072	1212	1212	1212		
10	Gnabit Elhebel East	701	235	0	0	4	34	0	0	270	158	200	0	0	4	34	0	0	270	193	8336	8901	701	701	8901	701	701	701		
11	Elalia New	1368	351	0	0	64	146	0	0	573	234	293	0	0	64	146	0	0	573	292	17543	19196	1368	1368	19196	1368	307	307		
12	Elawima	307	2	0	0	35	73	0	0	196	1	2	0	0	35	73	0	0	196	1	4946	5851	307	307	5851	307	307	307		
13	Elqabia	496	96	0	0	28	52	0	0	256	64	80	0	0	28	52	0	0	256	80	6844	7706	496	496	7706	496	496	496		
14	Metawe	296	0	0	7	110	0	0	179	0	0	0	0	7	110	0	0	179	0	4894	5631	296	296	5631	296	296	296			
15	Ganabit Elhebel West	325	170	0	0	12	9	0	0	21	113	140	0	0	12	9	0	0	21	143	3047	3244	325	325	3244	325	325	325		
16	Elsheikh Branch	524	220	0	0	41	0	0	0	118	145	185	0	0	41	0	0	0	118	180	5630	5637	524	524	5637	524	524	524		
17	Elkarnak East	1940	585	0	0	31	197	0	0	736	391	490	0	0	31	197	0	0	736	486	24055	25818	1940	1940	25818	1940	1940	1940		
18	Ganabit Elkarnak East	1190	409	0	0	18	80	0	0	411	272	340	0	0	18	80	0	0	411	341	14187	14914	1190	1190	14914	1190	1190	1190		
19	Elroda	240	73	0	0	0	79	0	0	79	49	61	0	0	0	39	0	0	79	61	2902	3072	240	240	3072	240	240	240		
20	Eloxour	3407	1395	0	0	22	282	0	0	779	929	1162	0	0	22	282	0	0	779	1162	37104	37200	3407	3407	37200	3407	3407	3407		
21	Ganabit Elkarnak West	1393	547	0	0	4	104	0	0	373	365	456	0	0	4	104	0	0	373	456	15576	15661	1393	1393	15661	1393	1393	1393		
22	Ganabit Elkarnak (1)	153	61	0	0	1	7	0	0	40	44	52	0	0	1	7	0	0	40	53	1649	1683	153	153	1683	153	153	153		
23	Ganabit Elkarnak (2)	623	228	0	0	2	24	0	0	217	152	190	0	0	2	24	0	0	217	190	7242	7569	623	623	7569	623	623	623		
24	Ganabit Elkarnak (3)	119	47	0	0	6	6	0	0	35	31	39	0	0	6	6	0	0	35	39	1343	1372	119	119	1372	119	119	119		
25	Eloxour Branch 1	233	48	0	0	67	0	0	106	32	40	0	0	67	0	0	106	40	3428	3801	253	253	3801	253	253	253				
26	Eloxour Branch 2	368	168	0	0	15	0	0	73	112	140	0	0	15	0	0	73	140	3806	3715	368	368	3715	368	368	368				
27	Eloxour Branch 3	249	120	0	0	14	0	0	28	86	103	0	0	1	14	0	0	28	103	2373	2260	249	249	2260	249	249	249			
28	Sahel Ellesty	1172	310	0	0	152	129	0	0	374	207	260	0	0	152	129	0	0	374	257	14851	16054	1172	1172	16054	1172	1172	1172		
29	Eizena	242	14	0	0	30	38	0	0	151	9	11	0	0	30	38	0	0	151	12	4381	4381	242	242	4381	242	242	242		
30	Eloxour Branch 4	260	112	0	0	13	0	0	60	75	93	0	0	13	0	0	60	94	2783	2761	260	260	2761	260	260	260				
31	Eloxour Branch 5	322	153	0	0	19	0	0	48	102	128	0	0	19	0	0	48	127	3235	3089	322	322	3089	322	322	322				
32	Eloxour Branch 6	123	71	0	0	5	0	0	0	47	59	0	0	5	0	0	0	59	0	1064	902	123	123	902	123	123	123			
33	Eisalda	330	104	0	0	12	86	0	0	59	69	85	0	0	12	86	0	0	59	88	3852	3939	330	330	3939	330	330	330		
34	Eloxour Branch 7	485	271	0	0	24	0	0	10	180	225	0	0	24	0	0	10	226	4302	3724	485	485	3724	485	485	485				
35	Elodesy	144	31	0	0	6	22	0	0	64	21	26	0	0	6	22	0	0	64	26	1935	2147	144	144	2147	144	144	144		
36	Elwatta	185	364	0	0	89	152	0	0	103	243	303	0	0	89	152	0	0	103	304	25786	29102	1851	1851	29102	1851	1851	1851		
37	Elalia	487	137	0	0	8	57	0	0	193	92	115	0	0	8	57	0	0	193	114	6126	6632	487	487	6632	487	487	487		
38	Elweljab	222	60	0	0	7	39	0	0	78	50	0	0	7	39	0	0	78	48	2835	3052	222	222	3052	222	222	222			
39	Syalt Baran	101	0	0	1	29	0	0	71	0	0	0	0	1	29	0	0	71	0	1630	1942	101	101	1942	101	101	101			
40	Nile	623	120	0	0	24	1	47	0	0	135	80	100	0	0	24	1	47	0	0	135	100	8261	9070	623	623	9070	623	623	623
41	Ground Water	727	110	0	0	5	10	0	0	467	73	91	0	0	5	10	0	0	467	92	10602	12196	727	727	12196	727	727	727		
42	Elklabia	94	12	0	0	10	4	0	0	60	8	10	0	0	10	4	0	0	60	10	1408	1635	94	94	1635	94	94	94		
43	Elbiaida	7	0	0	0	3	0	0	0	4	0	0	0	0	3	0	0	0	4	0	107	357847	380989	7	7	380989	7	7	7	
Check Sums:				29317	9154	0	0	1205	2624	0	0	10226	6108	7637	0	0	1205	2624	0	0	10226	7625	29317	29317	29317	29317	29317	29317	29317	29317

Table 6-4. (Continued).

Current and Expected Cropping Pattern in Luxor Irrigation District (2001)

Period	Canal	No.	Name	Area (Fed.)		Water Requirements (m^3/dy)										Check Sums								
				Total	Sugar	Maiza	Sesai	Gard	Other	VdC	Ri	Wheat	Fallow	Sugar	Maiza	Sesai	Gard	Other	VdC	Ri	Wheat	Fallow	0 - 2 wks	2 - 4 wks
1	Elmala	1519	492	0	0	99	72	0	0	363	493	394	0	0	99	72	0	0	363	591	16787	17213	1519	1519
2	Elsiamia - South	104	6	0	0	25	23	0	0	43	7	5	0	0	25	23	0	0	43	8	1753	2001	104	104
3	Sahel Elshaab	95	35	0	0	19	2	0	0	3	28	0	0	19	2	0	0	3	3	878	845	95	95	
4	Sahel Elodisat	781	27	0	0	186	10	0	0	46	512	205	0	186	10	0	0	46	334	4663	7599	781	781	
5	Elsiamia - North	1418	265	0	0	23	119	0	0	745	266	210	0	0	23	119	0	0	745	321	21155	23509	1418	1418
6	Canabit Elbotstan	425	80	0	0	8	53	0	0	205	79	62	0	0	8	53	0	0	205	97	6272	6922	425	425
7	Elhosha	1428	425	0	0	1	71	0	0	506	425	340	0	0	1	71	0	0	506	510	17304	18207	1428	1428
8	Elhebal Main	1193	260	0	0	28	129	0	0	515	211	0	0	28	129	0	0	515	310	16631	18218	1193	1193	
9	Elhebal East	1212	275	0	0	26	106	0	0	533	272	220	0	0	26	106	0	0	533	327	16831	18347	1212	1212
10	Gnabit Elhebel East	701	200	0	0	4	34	0	0	270	193	158	0	0	4	34	0	0	270	235	8726	9279	701	701
11	Elalia New	1368	293	0	0	64	146	0	0	573	292	230	0	0	64	146	0	0	573	355	18940	20711	1368	1368
12	Elawima	307	2	0	0	35	73	0	0	196	1	2	0	0	35	73	0	0	196	1	5849	6791	307	307
13	Elqabia	496	80	0	0	28	52	0	0	256	80	64	0	0	28	52	0	0	256	96	8546	8546	496	496
14	Metawe	296	0	0	26	110	0	0	179	0	0	0	0	7	110	0	0	179	0	5631	6431	296	296	
15	Gnabit Elhebel West	325	140	0	0	12	9	0	0	21	143	134	0	0	12	9	0	0	21	149	2622	2665	325	325
16	Elshekh Branch	524	185	0	0	41	0	0	0	118	180	148	0	0	41	0	0	0	118	217	5475	5521	524	524
17	Elkarnak East	1940	490	0	0	31	197	0	0	736	486	394	0	0	31	197	0	0	736	582	25390	27308	1940	1940
18	Ganabit Elkarnak East	1190	340	0	0	18	80	0	0	411	341	273	0	0	18	80	0	0	411	408	14616	15452	1190	1190
19	Eiroda	240	61	0	0	39	70	0	0	79	61	49	0	0	39	70	0	0	79	73	3078	3228	240	240
20	Eloxour	3407	1162	0	0	22	282	0	0	779	162	929	0	0	22	282	0	0	779	1395	36183	36630	3407	3407
21	Ganabit Elkarnak West	1333	456	0	0	4	104	0	0	373	456	365	0	0	4	104	0	0	373	547	15462	15867	1393	1393
22	Ganabit Elkarnak (1)	1533	52	0	0	1	7	0	0	40	53	42	0	0	1	7	0	0	40	63	1637	1669	153	153
23	Ganabit Elkarnak (2)	623	190	0	0	2	24	0	0	217	190	151	0	0	2	24	0	0	217	229	7402	7756	623	623
24	Ganabit Elkarnak (3)	119	39	0	0	6	0	0	35	39	31	0	0	6	0	0	0	35	47	1338	1375	119	119	
25	Eloxour Branch 1	253	40	0	0	67	0	0	106	40	33	0	0	67	0	0	106	40	47	3766	4198	253	253	
26	Eloxour Branch 2	368	140	0	0	15	0	0	73	140	112	0	0	15	0	0	73	168	3592	3531	368	368		
27	Eloxour Branch 3	249	103	0	0	1	14	0	0	28	103	81	0	0	1	14	0	0	28	125	2170	2014	249	249
28	Sahel Ellest	1172	260	0	0	152	129	0	0	374	257	206	0	0	152	129	0	0	374	311	15826	17084	1172	1172
29	Elzena	242	11	0	0	30	38	0	0	151	12	10	0	0	30	38	0	0	151	13	4372	5053	242	242
30	Eloxour Branch 4	260	93	0	0	13	0	0	60	94	75	0	0	13	0	0	60	112	2679	2690	260	260		
31	Eloxour Branch 5	322	128	0	0	19	0	0	48	127	102	0	0	19	0	0	48	153	2977	2850	322	322		
32	Eloxour Branch 6	123	59	0	0	5	0	0	0	59	47	0	0	5	0	0	0	71	850	702	123	123		
33	Elsaida	330	85	0	0	12	86	0	0	59	88	71	0	0	12	86	0	0	59	102	3865	4092	330	330
34	Eloxour Branch 7	485	225	0	0	24	0	0	10	226	179	0	0	24	0	0	10	272	3527	3006	485	485		
35	Elodesy	144	26	0	0	6	22	0	0	64	26	20	0	0	6	22	0	0	64	32	2124	2337	144	144
36	Elwatta	1851	303	0	0	89	152	0	0	1003	304	245	0	0	89	152	0	0	1003	362	28837	32276	1851	1851
37	Elalia	487	115	0	0	8	57	0	0	193	114	92	0	0	8	57	0	0	193	137	6531	7074	487	487
38	Elweljab	222	50	0	0	7	39	0	0	78	48	40	0	0	7	39	0	0	78	58	3009	3256	222	222
39	Syalt Baran	101	0	0	1	29	0	0	71	0	0	0	0	1	29	0	0	71	0	1942	2270	101	101	
40	Nile	623	100	0	0	241	47	0	0	135	100	80	0	0	241	47	0	0	135	120	8933	9840	623	623
41	Ground Water	727	91	0	0	5	72	0	0	467	92	74	0	0	5	72	0	0	467	109	12116	13777	727	727
42	Elkabia	94	10	0	0	10	4	0	0	60	10	8	0	0	10	4	0	0	60	12	1626	1852	94	94
43	Elbiadia	7	0	0	0	3	0	0	4	0	0	0	0	3	0	0	4	0	0	125	145	7	7	
Check Sums:				29317	7394	0	0	1205	2624	0	0	10226	7888	6120	0	0	1205	2624	0	0	10226	9142	29317	29317
Check Sums:																					400134	400134		

Table 6-4. (Continued).

Current and Expected Cropping Pattern in Luxor Irrigation District (2001)

Period	Canal	No	Name	Area (Fed.)										Water Requirements (m^3/dy)						Check Sums						
				Total	Sugar	Maiza	Sesai	Gard	Other	Vegetable	Cereals	Rice	Wheat	Fallow	Sugar	Maiza	Sesai	Gard	Other	Vegetable	Cereals	Rice	Wheat	Fallow	0 - 2 wks	2 - 4 wks
1	Elmala	1519	394	0	0	99	72	0	0	363	591	394	0	0	99	72	0	0	363	591	17558	19564	1519	1519		
2	Elsiamia - South	104	5	0	0	25	23	0	0	43	8	5	0	0	25	23	0	0	43	8	2005	2239	104	104		
3	Sahel Elshaab	95	28	0	0	19	2	0	0	3	43	28	0	0	19	2	0	0	3	43	869	95	95	95		
4	Sahel Elodisat	781	205	0	0	186	10	0	0	46	334	205	0	0	186	10	0	0	46	334	7778	8624	781	781		
5	Elsiamia - North	1418	210	0	0	23	119	0	0	745	321	210	0	0	23	119	0	0	745	321	23692	26524	1418	1418		
6	Canabit Elbotstan	425	62	0	0	8	53	0	0	205	97	62	0	0	8	53	0	0	205	97	6976	7786	425	425		
7	Elhosha	1428	340	0	0	1	71	0	0	506	510	340	0	0	1	71	0	0	506	510	18505	20556	1428	1428		
8	Elhebal Main	1193	211	0	0	28	129	0	0	515	310	211	0	0	28	129	0	0	515	310	18403	20502	1193	1193		
9	Elhebal East	1212	220	0	0	26	106	0	0	533	327	220	0	0	26	106	0	0	533	327	18540	20657	1212	1212		
10	Gnabit Elhebel East	701	158	0	0	4	34	0	0	270	235	158	0	0	4	34	0	0	270	235	9417	10596	701	701		
11	Elalia New	1368	230	0	0	64	146	0	0	573	335	230	0	0	64	146	0	0	573	335	20912	23475	1368	1368		
12	Elawima	307	2	0	0	35	73	0	0	196	1	2	0	0	35	73	0	0	196	1	6793	7579	307	307		
13	Elqabia	496	64	0	0	28	52	0	0	256	96	64	0	0	28	52	0	0	256	96	8602	9633	496	496		
14	Metawe	296	0	0	7	110	0	0	179	0	0	0	0	7	110	0	0	179	0	6431	7175	296	296			
15	Ganabit Elhebel West	325	134	0	0	12	9	0	0	21	149	134	0	0	12	9	0	0	21	149	2782	3068	325	325		
16	Elshekh Branch	524	148	0	0	41	0	0	118	217	148	0	0	0	41	0	0	118	217	5650	6303	524	524			
17	Elkarnak East	1940	394	0	0	31	197	0	0	736	582	394	0	0	31	197	0	0	736	582	27652	30767	1940	1940		
18	Ganabit Elkarnak East	1190	273	0	0	18	80	0	0	411	408	273	0	0	18	80	0	0	411	408	15691	17441	1190	1190		
19	Elroda	240	49	0	0	39	0	0	79	73	49	0	0	39	0	0	79	73	3270	3654	240	240				
20	Eloxour	929	0	0	22	282	0	0	779	1395	929	0	0	22	282	0	0	779	1395	37443	41557	3407	3407			
21	Ganabit Elkarnak West	1333	365	0	0	4	104	0	0	373	547	365	0	0	4	104	0	0	373	547	16186	17959	1393	1393		
22	Ganabit Elkarnak (1)	153	42	0	0	1	7	0	0	40	63	42	0	0	1	7	0	0	40	63	1706	1898	153	153		
23	Ganabit Elkarnak (2)	623	151	0	0	2	24	0	0	217	229	151	0	0	2	24	0	0	217	229	7888	8786	623	623		
24	Ganabit Elkarnak (3)	119	31	0	0	6	0	0	35	47	31	0	0	0	6	0	0	35	47	1402	1556	119	119			
25	Eloxour Branch 1	253	33	0	0	67	0	0	106	47	33	0	0	0	67	0	0	106	47	4226	4703	253	253			
26	Eloxour Branch 2	368	112	0	0	15	0	0	73	168	112	0	0	0	15	0	0	73	168	3629	4020	368	368			
27	Eloxour Branch 3	249	81	0	0	1	14	0	0	28	125	81	0	0	1	14	0	0	28	125	2085	2304	249	249		
28	Sahel Ellest	1172	206	0	0	152	129	0	0	374	311	206	0	0	152	129	0	0	374	311	17284	19202	1172	1172		
29	Eizena	242	10	0	0	30	38	0	0	151	13	10	0	0	30	38	0	0	151	13	5062	5666	242	242		
30	Eloxour Branch 4	260	75	0	0	13	0	0	60	112	75	0	0	0	13	0	0	60	112	2756	3054	260	260			
31	Eloxour Branch 5	322	102	0	0	19	0	0	48	153	102	0	0	0	19	0	0	48	153	2939	3252	322	322			
32	Eloxour Branch 6	123	47	0	0	5	0	0	0	71	47	0	0	0	5	0	0	0	71	743	817	123	123			
33	Elsaida	330	71	0	0	12	86	0	0	59	102	71	0	0	12	86	0	0	59	102	4154	4609	330	330		
34	Eloxour Branch 7	485	179	0	0	24	0	0	10	272	179	0	0	0	24	0	0	10	272	3163	3480	485	485			
35	Elodesy	144	20	0	0	6	22	0	0	64	32	20	0	0	6	22	0	0	64	32	2355	2620	144	144		
36	Elwatta	1851	245	0	0	89	152	0	0	1003	362	245	0	0	89	152	0	0	1003	362	32490	36213	1851	1851		
37	Elalia	487	92	0	0	8	57	0	0	193	137	92	0	0	8	57	0	0	193	137	7154	7975	487	487		
38	Elweljab	222	40	0	0	7	39	0	0	78	58	40	0	0	7	39	0	0	78	58	3291	3658	222	222		
39	Syalt Baran	101	0	0	1	29	0	0	71	0	0	0	0	1	29	0	0	71	0	2270	2531	101	101			
40	Nile	623	80	0	0	241	47	0	0	135	120	80	0	0	241	47	0	0	135	120	11033	123	623	623		
41	Ground Water	727	74	0	0	5	72	0	0	467	109	74	0	0	5	72	0	0	467	109	13841	15462	727	727		
42	Elkabia	94	8	0	0	10	4	0	0	60	12	8	0	0	10	4	0	0	60	12	1859	2071	94	94		
43	Elbiadia	7	0	0	0	3	0	0	4	0	0	0	0	3	0	0	4	0	0	145	165	7	7			
Check Sums:				29317	6120	0	0	1205	2624	0	0	10226	9142	6120	0	0	1205	2624	0	0	10226	9142	455489	451695	29317	29317

Table 6-4. (Continued).

Period	Canal	No	Name	Area (Fed.)				Current and Expected Cropping Pattern in Luxor Irrigation District (2001)								Water Requirements (m^3/dy)				Water Requirements (m^3/dy)						
				Total	Sugar	Maize	Sesai	Gard	Other	Vegetable	Corn	Rice	Wheat	Fallow	Sugar	Maize	Sesai	Gard	Other	Vegetable	Corn	Rice	Wheat	Fallow	0 - 2 wks	2 - 4 wks
1	Elmala	1519	394	0	0	99	72	0	0	363	591	492	0	0	99	72	0	0	363	493	20604	26802	1519	1519		
2	Elsiamia - South	104	5	0	0	25	23	0	0	43	8	6	0	0	25	23	0	0	43	7	2252	2719	104	104		
3	Sahel Elshaab	95	28	0	0	19	2	0	0	3	35	34	270	0	0	19	2	0	0	3	36	1035	1393	95	95	
4	Sahel Elodisat	781	205	0	0	186	10	0	0	46	334	270	0	0	186	10	0	0	46	269	9165	12398	781	781		
5	Elsiamia - North	1418	210	0	0	23	119	0	0	745	321	215	0	0	23	119	0	0	745	316	27078	32517	1418	1418		
6	Canabit Elbotstan	425	62	0	0	8	53	0	0	205	97	80	0	0	8	53	0	0	205	79	7949	9902	425	425		
7	Elhosha	1428	340	0	0	1	71	0	0	506	510	425	0	0	1	71	0	0	506	425	21453	27508	1428	1428		
8	Elhebal Main	1193	211	0	0	28	129	0	0	515	310	260	0	0	28	129	0	0	515	261	26261	32621	1193	1193		
9	Elhebal East	1212	220	0	0	26	106	0	0	533	327	215	0	0	26	106	0	0	533	272	21238	26802	1212	1212		
10	Gnabit Elhebel East	701	158	0	0	4	34	0	0	270	235	200	0	0	4	34	0	0	270	193	11013	14102	701	701		
11	Elalia New	1368	230	0	0	64	146	0	0	573	335	293	0	0	64	146	0	0	573	292	24082	30209	1368	1368		
12	Elawima	307	2	0	0	35	73	0	0	196	1	2	0	0	35	73	0	0	196	1	7585	9075	307	307		
13	Elqabia	496	64	0	0	28	52	0	0	256	96	80	0	0	28	52	0	0	256	80	9802	12079	496	496		
14	Metawe	296	0	0	7	110	0	0	179	0	0	0	0	7	110	0	0	179	0	7175	8573	296	296			
15	Ganabit Elhebel West	325	134	0	0	12	9	0	0	21	149	140	0	0	12	9	0	0	21	143	3421	4232	325	325		
16	Elshekh Branch	524	148	0	0	41	0	0	118	217	185	0	0	41	0	0	118	180	180	6694	8821	524	524			
17	Elkarnak East	1940	394	0	0	31	197	0	0	736	582	490	0	0	31	197	0	0	736	486	31807	40141	1940	1940		
18	Ganabit Elkarnak East	1190	273	0	0	18	80	0	0	411	408	340	0	0	18	80	0	0	411	341	18162	23184	1190	1190		
19	Eiroda	240	49	0	0	39	0	0	79	73	61	0	0	39	0	0	79	61	3783	4808	240	240				
20	Eloxour	929	0	0	22	282	0	0	779	1395	1162	0	0	22	282	0	0	779	1162	44010	57776	3407	3407			
21	Ganabit Elkarnak West	1333	365	0	0	4	104	0	0	373	547	456	0	0	4	104	0	0	373	456	18923	24621	1393	1393		
22	Ganabit Elkarnak (1)	153	42	0	0	1	7	0	0	40	63	52	0	0	1	7	0	0	40	53	2009	2627	153	153		
23	Ganabit Elkarnak (2)	623	151	0	0	2	24	0	0	217	229	190	0	0	2	24	0	0	217	190	9184	11857	623	623		
24	Ganabit Elkarnak (3)	119	31	0	0	6	0	0	35	47	39	0	0	6	0	0	35	39	39	1638	2133	119	119			
25	Eloxour Branch 1	253	33	0	0	67	0	0	106	47	40	0	0	67	0	0	106	40	4790	5884	253	253				
26	Eloxour Branch 2	368	112	0	0	15	0	0	73	168	140	0	0	15	0	0	73	140	4315	5774	368	368				
27	Eloxour Branch 3	249	81	0	0	1	14	0	0	28	125	103	0	0	1	14	0	0	28	103	2518	3493	249	249		
28	Sahel Ellest	1172	206	0	0	152	129	0	0	374	311	260	0	0	152	129	0	0	374	257	19746	24824	1172	1172		
29	Eizena	242	10	0	0	30	38	0	0	151	13	11	0	0	30	38	0	0	151	12	5692	6856	242	242		
30	Eloxour Branch 4	260	75	0	0	13	0	0	60	93	0	0	0	13	0	0	60	94	3252	4283	260	260				
31	Eloxour Branch 5	322	102	0	0	19	0	0	48	153	128	0	0	19	0	0	48	127	3521	4780	322	322				
32	Eloxour Branch 6	123	47	0	0	5	0	0	0	71	59	0	0	5	0	0	0	59	0	941	1388	123	123			
33	Elsaida	330	71	0	0	12	86	0	0	59	102	85	0	0	12	86	0	0	59	88	4796	6050	330	330		
34	Eloxour Branch 7	485	179	0	0	24	0	0	10	272	225	0	0	24	0	0	10	226	3953	5736	485	485				
35	Elodesy	144	20	0	0	6	22	0	0	64	32	26	0	0	6	22	0	0	64	26	2673	3328	144	144		
36	Elwatta	1851	245	0	0	89	152	0	0	1003	362	303	0	0	89	152	0	0	1003	304	36860	45381	1851	1851		
37	Elalia	487	92	0	0	8	57	0	0	193	137	115	0	0	8	57	0	0	193	114	8228	10351	487	487		
38	Elweljab	222	40	0	0	7	39	0	0	78	58	50	0	0	7	39	0	0	78	48	3763	4721	222	222		
39	Syalt Baran	101	0	0	1	29	0	0	71	0	0	0	0	1	29	0	0	71	0	2531	3028	101	101			
40	Nile	623	80	0	0	241	47	0	0	135	120	100	0	0	241	47	0	0	135	100	11244	13927	623	623		
41	Ground Water	727	74	0	0	5	72	0	0	467	109	91	0	0	5	72	0	0	467	92	15657	19130	727	727		
42	Elkabia	94	8	0	0	10	4	0	0	60	12	10	0	0	10	4	0	0	60	10	2092	2545	94	94		
43	Elbiadia	7	0	0	0	3	0	0	4	0	0	0	0	3	0	0	4	0	0	165	200	200	7	7		
Check Sums:				29317	6120	0	0	1205	2624	0	0	10226	9142	7587	0	0	1205	2624	0	0	10226	7676	467851.9	592020.3	29317	29317

Table 6-4. (Continued).

Current and Expected Cropping Pattern in Luxor Irrigation District (2001)

Period	Canal	No	Name	Area (Fed.)					Water Requirements (m^3/dy)					Check Sums												
				Total	Sugar	Maiza	Sesai	Gard	Other	Vegetable	Corn	Wheat	Fallow	Sugar	Maiza	Sesai	Gard	Other	Vegetable	Corn	Wheat	Fallow	0 - 2 wks	2 - 4 wks	Existing	Expected
1	Elmala	1519	492	0	0	99	72	0	0	363	493	590	0	0	99	72	0	0	363	395	28361	34347	1519	1519		
2	Elsiamia - South	104	6	0	0	25	23	0	0	43	7	8	0	0	25	23	0	0	43	5	2738	3078	104	104		
3	Sahel Elshaab	95	35	0	0	19	2	0	0	3	46	264	323	0	0	19	2	0	0	3	28	1504	1986	95	95	
4	Sahel Elodisat	781	275	0	0	186	10	0	0	46	264	323	0	0	186	10	0	0	46	216	13378	16819	781	781		
5	Elsiamia - North	1418	265	0	0	23	119	0	0	745	266	320	0	0	23	119	0	0	745	211	34436	38576	1418	1418		
6	Canabit Elbotstan	425	80	0	0	8	53	0	0	205	79	95	0	0	8	53	0	0	205	64	10155	11408	425	425		
7	Elhosha	1428	425	0	0	1	71	0	0	506	425	510	0	0	1	71	0	0	506	340	28854	33936	1428	1428		
8	Elhebal Main	1193	260	0	0	28	129	0	0	515	261	313	0	0	28	129	0	0	515	208	30929	33936	1193	1193		
9	Elhebal East	1212	275	0	0	26	106	0	0	533	272	328	0	0	26	106	0	0	533	219	27473	31251	1212	1212		
10	Gnabit Elhebel East	701	200	0	0	4	34	0	0	270	193	235	0	0	4	34	0	0	270	158	14736	17067	701	701		
11	Elalia New	1368	293	0	0	64	146	0	0	573	292	351	0	0	64	146	0	0	573	234	31137	36617	1368	1368		
12	Elawima	307	2	0	0	35	73	0	0	196	1	2	0	0	35	73	0	0	196	1	9081	9738	307	307		
13	Elqibbia	496	80	0	0	28	52	0	0	256	80	96	0	0	28	52	0	0	256	64	13733	13750	496	496		
14	Metawe	296	0	0	26	110	0	0	179	0	0	0	0	0	7	110	0	0	179	0	8573	8805	296	296		
15	Gnabit Elhebel West	325	140	0	0	12	9	0	0	21	143	170	0	0	12	9	0	0	21	113	4676	6235	325	325		
16	Elshekh Branch	524	185	0	0	41	10	0	0	118	180	220	0	0	0	41	10	0	0	118	145	9408	11515	524	524	
17	Elkarnak East	1940	490	0	0	31	197	0	0	736	486	595	0	0	31	197	0	0	736	391	41693	48189	1940	1940		
18	Ganabit Elkarnak East	1190	340	0	0	18	80	0	0	411	341	409	0	0	18	80	0	0	411	272	24261	28499	1190	1190		
19	Elroda	61	0	0	0	39	79	0	0	79	61	73	0	0	0	79	61	0	0	79	49	5001	5643	240	240	
20	Eloxour	3407	1162	0	0	22	282	0	0	779	162	1395	0	0	22	282	0	0	779	929	61457	75205	3407	3407		
21	Ganabit Elkarnak West	1333	456	0	0	4	104	0	0	373	456	547	0	0	4	104	0	0	373	365	26066	31458	1393	1393		
22	Ganabit Elkarnak (1)	153	52	0	0	1	7	0	0	40	53	61	0	0	1	7	0	0	40	44	2792	3343	153	153		
23	Ganabit Elkarnak (2)	623	190	0	0	2	24	0	0	217	190	228	0	0	2	24	0	0	217	152	12459	14745	623	623		
24	Ganabit Elkarnak (3)	119	39	0	0	6	6	0	0	35	39	47	0	0	0	6	6	0	0	35	31	2257	2716	119	119	
25	Eloxour Branch 1	253	40	0	0	67	106	0	0	40	48	50	0	0	67	106	0	0	67	32	6011	6799	253	253		
26	Eloxour Branch 2	368	140	0	0	15	15	0	0	73	140	165	0	0	0	15	15	0	0	73	115	6217	7687	368	368	
27	Eloxour Branch 3	249	103	0	0	1	14	0	0	28	103	120	0	0	1	14	0	0	28	86	3819	4824	249	249		
28	Sahel Ellesty	1172	260	0	0	152	129	0	0	374	257	310	0	0	152	129	0	0	374	207	25647	29770	1172	1172		
29	Elzena	242	11	0	0	30	38	0	0	151	12	14	0	0	30	38	0	0	151	9	6891	7466	242	242		
30	Eloxour Branch 4	260	93	0	0	13	13	0	0	60	94	112	0	0	0	13	13	0	0	60	75	4578	5628	260	260	
31	Eloxour Branch 5	322	128	0	0	19	19	0	0	48	127	153	0	0	0	19	19	0	0	48	102	5185	6562	322	322	
32	Eloxour Branch 6	123	59	0	0	5	5	0	0	0	59	71	0	0	0	5	5	0	0	0	47	1575	2184	123	123	
33	Elsaida	330	85	0	0	12	86	0	0	59	88	104	0	0	12	86	0	0	59	69	6319	7677	330	330		
34	Eloxour Branch 7	485	225	0	0	24	0	0	10	226	271	0	0	0	24	0	0	10	180	31	6449	8809	485	485		
35	Elodesy	144	26	0	0	6	22	0	0	64	26	31	0	0	6	22	0	0	64	21	3410	3844	144	144		
36	Elwatta	1851	303	0	0	89	152	0	0	1003	304	364	0	0	89	152	0	0	1003	243	46341	51464	1851	1851		
37	Elalia	487	115	0	0	8	57	0	0	193	114	137	0	0	8	57	0	0	193	92	10716	12318	487	487		
38	Elweljab	222	50	0	0	7	39	0	0	78	48	60	0	0	7	39	0	0	78	38	4879	5641	222	222		
39	Syalt Baran	101	0	0	1	29	0	0	71	0	0	0	0	1	29	0	0	71	0	3028	3253	101	101			
40	Nile	623	100	0	0	241	47	0	0	135	100	120	0	0	241	47	0	0	135	80	14244	16657	623	623		
41	Ground Water	727	91	0	0	5	72	0	0	467	92	110	0	0	5	72	0	0	467	73	19418	21199	727	727		
42	Elkabia	94	10	0	0	10	4	0	0	60	10	12	0	0	10	4	0	0	60	8	2576	2802	94	94		
43	Elbiadia	7	0	0	0	3	0	0	4	0	0	0	0	0	3	0	0	4	0	0	200	216	7	7		
Check Sums:				29317	7642	0	0	1205	2624	0	0	10226	7620	9151	0	0	1205	2624	0	0	10226	6111	617418	71955	29317	29317

Table 6-4. (Continued).

Current and Expected Cropping Pattern in Luxor Irrigation District (2001)

Period	Canal	No.	Name	Area (Fed.)										Water Requirements (m^3/dy)						Check Sums					
				Total	Sugar	Maiza	Sesai	Gard	Other	Vegetable	Corn	Rice	Wheat	Fallow	Sugar	Maiza	Sesai	Gard	Other	Vegetable	Corn	Rice	Wheat	Fallow	0 - 2 wks
1	Elmala	1519	590	0	0	99	72	0	0	363	395	670	0	0	99	72	0	0	363	315	36924	38788	1519	1519	
2	Elsiamia - South	104	8	0	0	25	23	0	0	43	5	9	0	0	25	23	0	0	43	4	3113	2989	104	104	
3	Sahel Elshaab	95	43	0	0	19	2	0	0	3	50	0	0	19	2	0	0	3	21	2174	2535	95	95		
4	Sahel Elodisat	781	323	0	0	186	10	0	0	46	216	370	0	0	186	10	0	0	46	169	18230	20529	781	781	
5	Elsiamia - North	1418	320	0	0	23	119	0	0	745	211	370	0	0	23	119	0	0	745	161	39974	37943	1418	1418	
6	Canabit Elbotstan	425	95	0	0	8	53	0	0	205	64	110	0	0	8	53	0	0	205	49	11823	11355	425	425	
7	Elhosha	1428	510	0	0	1	71	0	0	506	340	580	0	0	1	71	0	0	506	270	36163	36481	1428	1428	
8	Elhebal Main	1193	313	0	0	28	129	0	0	515	208	360	0	0	28	129	0	0	515	161	1193	1193	1193	1193	
9	Elhebal East	1212	328	0	0	26	106	0	0	533	219	375	0	0	26	106	0	0	533	172	32683	31740	1212	1212	
10	Gnabit Elhebel East	701	235	0	0	4	34	0	0	270	158	280	0	0	4	34	0	0	270	113	18094	18541	701	701	
11	Elalia New	1388	351	0	0	64	146	0	0	573	234	400	0	0	64	146	0	0	573	185	37151	36438	1368	1368	
12	Elawima	307	2	0	0	35	73	0	0	196	1	2	0	0	35	73	0	0	196	1	9747	8675	307	307	
13	Elqabia	486	96	0	0	28	52	0	0	256	64	105	0	0	28	52	0	0	256	55	14169	13200	496	496	
14	Metawe	296	0	0	7	110	0	0	179	0	0	0	0	7	110	0	0	179	0	8805	7083	296	296		
15	Ganabit Elhebel West	325	170	0	0	12	9	0	0	21	113	200	0	0	12	9	0	0	21	83	6977	8239	325	325	
16	Elsheikh Branch	524	220	0	0	41	0	0	118	145	250	0	0	41	0	0	118	115	12476	13319	524	524			
17	Elkarnak East	1940	585	0	0	31	197	0	0	736	391	700	0	0	31	197	0	0	736	276	50745	51537	1940	1940	
18	Ganabit Elkarnak East	1190	409	0	0	18	80	0	0	411	272	475	0	0	18	80	0	0	411	206	30285	30868	1190	1190	
19	Eiroda	240	73	0	0	0	39	0	0	79	49	85	0	0	39	39	0	0	79	0	6162	6162	240	240	
20	Eloxour	3407	1395	0	0	22	282	0	0	779	929	1560	0	0	22	282	0	0	779	774	81298	85051	3407	3407	
21	Ganabit Elkarnak West	1383	547	0	0	4	104	0	0	373	365	630	0	0	4	104	0	0	373	282	33848	35618	1393	1393	
22	Ganabit Elkarnak (1)	153	61	0	0	1	7	0	0	40	44	70	0	0	1	7	0	0	40	35	3609	3793	153	153	
23	Ganabit Elkarnak (2)	623	228	0	0	2	24	0	0	217	152	275	0	0	2	24	0	0	217	105	15741	16569	623	623	
24	Ganabit Elkarnak (3)	119	47	0	0	6	6	0	0	35	31	50	0	0	6	6	0	0	35	28	2921	2905	119	119	
25	Eloxour Branch 1	253	48	0	0	67	0	0	106	32	56	0	0	67	0	0	106	57	7008	6832	253	253			
26	Eloxour Branch 2	368	165	0	0	15	0	0	73	115	196	0	0	15	0	0	73	84	8408	9405	368	368			
27	Eloxour Branch 3	249	120	0	0	1	14	0	0	28	86	140	0	0	1	14	0	0	28	66	5348	6108	249	249	
28	Sahel Elieshy	1172	310	0	0	152	129	0	0	374	207	360	0	0	152	129	0	0	374	157	31124	31562	1172	1172	
29	Eizena	242	14	0	0	30	38	0	0	151	9	14	0	0	30	38	0	0	151	9	2921	6696	242	242	
30	Eloxour Branch 4	260	112	0	0	13	0	0	60	75	130	0	0	13	0	0	60	57	6117	6587	260	260			
31	Eloxour Branch 5	322	153	0	0	19	0	0	48	102	180	0	0	19	0	0	48	75	7231	8174	322	322			
32	Eloxour Branch 6	123	71	0	0	5	0	0	0	47	83	0	0	5	0	0	0	0	35	2494	3049	123	123		
33	Elsaida	330	104	0	0	12	86	0	0	59	69	121	0	0	12	86	0	0	59	52	8131	8705	330	330	
34	Eloxour Branch 7	485	271	0	0	24	0	0	10	180	315	0	0	24	0	0	10	136	9983	11989	485	485			
35	Elodesy	144	31	0	0	6	22	0	0	64	21	36	0	0	6	22	0	0	64	16	3979	3847	144	144	
36	Elwalia	1851	364	0	0	89	152	0	0	1003	243	425	0	0	89	152	0	0	1003	182	53054	49896	1851	1851	
37	Elalia	487	137	0	0	8	57	0	0	193	92	160	0	0	8	57	0	0	193	69	12917	12885	487	487	
38	Elweljab	222	60	0	0	7	39	0	0	78	38	70	0	0	7	39	0	0	78	28	5903	5934	222	222	
39	Syalt Baran	101	0	0	1	29	0	0	71	0	0	0	0	1	29	0	0	71	0	3233	2904	101	101		
40	Nile	623	120	0	0	241	47	0	0	135	80	140	0	0	241	47	0	0	135	60	17181	17791	623	623	
41	Ground Water	727	110	0	0	5	10	0	0	467	73	128	0	0	5	72	0	0	467	55	21680	19729	727	727	
42	Elkabia	94	12	0	0	10	4	0	0	60	8	14	0	0	10	4	0	0	60	6	2854	2588	94	94	
43	Elbiadia	7	0	0	0	3	0	0	4	0	0	0	0	3	0	0	4	0	0	216	195	7	7		
Check Sums:				29317	9151	0	0	1205	2624	0	0	10226	6111	10534	0	0	1205	2624	0	0	10226	4728	769827	29317	29317

Table 6-4. (Continued).

Current and Expected Cropping Pattern in Luxor Irrigation District (2001)

Period	Canal	No	Name	Area (Fed.)							Water Requirements (m^3/dy)							Check Sums						
				Total	Sugar	MaiZed Sesai	Gard Other	Vd CRI	Wheat	Fallow	Sugar	MaiZed Sesai	Gardl Other	Vd CRI	Wheat	Fallow	0 - 2 wks	2 - 4 wks	Check Sums					
1	Elmala	1519	690	0	0	99	72	0	0	363	295	788	0	0	99	72	0	0	560	42420	38581			
2	Elsiamia - South	104	9	0	0	25	23	0	0	43	4	10	0	0	25	23	0	0	46	3027	1957			
3	Sahel Elshaab	95	50	0	0	19	2	0	0	3	21	56	0	0	19	2	0	0	18	2747	3056			
4	Sahel Elodisat	781	375	0	0	186	10	0	0	41	169	431	0	0	186	10	0	0	154	22150	24710			
5	Elsiamia - North	1418	370	0	0	23	119	0	0	672	234	424	0	0	23	119	0	0	0	852	37466	22126		
6	Canabit Elbotstan	425	110	0	0	8	53	0	0	183	71	127	0	0	8	53	0	0	0	237	11204	7184		
7	Elhosha	1428	595	0	0	1	71	0	0	456	305	680	0	0	1	71	0	0	0	676	38137	30686		
8	Elhebel Main	1193	360	0	0	28	129	0	0	465	211	416	0	0	28	129	0	0	0	620	32259	1193		
9	Elhebel East	1212	375	0	0	26	106	0	0	490	215	437	0	0	26	106	0	0	0	643	32139	22386		
10	Gnabit Elhebel East	701	280	0	0	4	34	0	0	242	141	314	0	0	4	34	0	0	0	349	18937	14326		
11	Elalia New	1388	410	0	0	64	146	0	0	522	226	488	0	0	64	146	0	0	0	690	37079	26173		
12	Elawima	307	2	0	0	35	73	0	0	180	17	2	0	0	35	73	0	0	0	197	8229	3455		
13	Elqabia	486	115	0	0	28	52	0	0	228	73	128	0	0	28	52	0	0	0	288	7876	496		
14	Metawe	296	0	0	7	110	0	0	160	19	19	0	0	7	110	0	0	0	179	6681	3523			
15	Gnabit Elhebel West	325	200	0	0	12	9	0	0	18	86	226	0	0	12	9	0	0	0	349	9004	10160		
16	Elshekh Branch	524	255	0	0	41	0	0	0	106	122	292	0	0	0	41	0	0	0	191	14231	13476		
17	Elkarnak East	1940	700	0	0	31	197	0	0	660	352	780	0	0	31	197	0	0	0	932	52393	39665		
18	Gnabit Elkarnak East	1190	475	0	0	18	80	0	0	383	234	544	0	0	18	80	0	0	0	548	25826	1190		
19	Elroda	240	85	0	0	39	0	0	79	97	0	0	0	39	0	0	0	0	179	6681	3523			
20	Eloxour	3407	1630	0	0	22	282	0	0	709	764	1859	0	0	22	282	0	0	0	78	92789	87169		
21	Gnabit Elkarnak West	1383	630	0	0	4	104	0	0	343	312	729	0	0	4	104	0	0	0	556	37450	33829		
22	Gnabit Elkarnak (1)	153	70	0	0	1	7	0	0	30	45	84	0	0	1	7	0	0	0	61	3812	3768		
23	Gnabit Elkarnak (2)	623	275	0	0	2	24	0	0	192	130	304	0	0	2	24	0	0	0	293	17023	13540		
24	Gnabit Elkarnak (3)	119	50	0	0	6	0	0	30	33	62	0	0	0	6	0	0	0	51	2977	2781			
25	Eloxour Branch 1	253	56	0	0	67	0	0	88	42	64	0	0	0	67	0	0	0	122	6561	4686			
26	Eloxour Branch 2	368	196	0	0	15	0	0	58	99	224	0	0	0	15	0	0	0	129	9803	9847			
27	Eloxour Branch 3	249	140	0	0	1	14	0	0	22	72	164	0	0	1	14	0	0	0	70	6536	7333		
28	Sahel Elieshy	1172	360	0	0	152	129	0	0	352	179	413	0	0	152	129	0	0	0	478	32474	26352		
29	Elzena	242	14	0	0	30	38	0	0	140	20	18	0	0	30	38	0	0	0	156	6450	2422		
30	Eloxour Branch 4	260	130	0	0	13	0	0	50	50	149	0	0	0	13	0	0	0	98	6861	6640			
31	Eloxour Branch 5	322	180	0	0	19	0	0	40	83	204	0	0	0	19	0	0	0	99	8716	9127			
32	Eloxour Branch 6	123	83	0	0	5	0	0	0	35	94	0	0	0	5	0	0	0	24	3403	4093			
33	Elsaida	330	121	0	0	12	86	0	0	50	61	138	0	0	12	86	0	0	0	94	8963	8767		
34	Eloxour Branch 7	485	315	0	0	24	0	0	10	136	360	0	0	0	24	0	0	0	101	13327	15822			
35	Elodesy	144	36	0	0	6	22	0	0	58	22	41	0	0	6	22	0	0	0	75	3833	144		
36	Elwalia	1851	425	0	0	89	152	0	0	908	277	485	0	0	89	152	0	0	0	1125	49057	27916		
37	Elalia	487	160	0	0	8	57	0	0	180	82	183	0	0	8	57	0	0	0	239	13199	9653		
38	Eweljab	222	70	0	0	7	39	0	0	65	41	79	0	0	7	39	0	0	0	97	5871	4717		
39	Syalt Baran	101	0	0	1	29	0	0	59	12	0	0	0	1	29	0	0	0	71	2556	101			
40	Nile	623	140	0	0	241	47	0	0	120	75	160	0	0	241	47	0	0	0	175	17954	16316		
41	Ground Water	727	128	0	0	5	423	0	0	99	146	0	0	0	5	72	0	0	0	504	19041	8446		
42	Elkabia	94	14	0	0	10	4	0	0	50	16	0	0	0	10	4	0	0	0	64	2370	1131		
43	Elbiadia	7	0	0	0	3	0	0	4	0	0	0	0	0	3	0	0	0	4	195	90	7		
Check Sums:				29317	10679	0	0	1205	2624	0	0	9275	554	12196	0	0	1205	2624	0	0	0	13292	790774	29317
Check Sums:																								

Table 6-4. (Continued).

Current and Expected Cropping Pattern in Luxor Irrigation District (2001)

Period	Canal	No	Name	Area (Fed.)								Water Requirements (m^3/dy)								Check Sums								
				Total	Sugar	Maiza	Sesai	Gard	Other	Vegetable	Cereals	Wheat	Fallow	Sugar	Maiza	Sesai	Gard	Other	Vegetable	Cereals	Wheat	Fallow	0 - 2 wks	2 - 4 wks	Check Sums			
1	Elmala	1519	788	0	0	99	72	0	0	560	886	18	0	99	58	0	0	458	42155	48345	1519	1519	104	104				
2	Elsiamia - South	104	10	0	0	25	23	0	0	0	46	11	2	0	25	17	0	0	49	2002	1994	3751	3751	95	95			
3	Sahel Elshaab	95	56	0	0	19	2	0	0	0	154	485	2	0	186	10	0	0	11	3310	26665	30167	30167	781	781			
4	Sahel Elodisat	781	431	0	0	186	10	0	0	0	154	485	2	0	186	10	0	0	0	98	24049	27400	1418	1418	1418	1418		
5	Elsiamia - North	1418	424	0	0	23	119	0	0	0	852	477	30	0	23	89	0	0	0	799	7760	8665	33770	33770	1428	1428		
6	Canabit Elbotstan	425	127	0	0	8	53	0	0	0	237	143	10	0	8	39	0	0	0	225	3376	33365	33365	33365	425	425		
7	Elhosha	1428	680	0	0	1	71	0	0	0	676	765	0	0	1	53	0	0	0	609	24146	24146	1193	1193	1193	1193		
8	Elhebal Main	1193	416	0	0	28	129	0	0	0	620	488	25	0	28	96	0	0	0	576	27198	27198	1193	1193	1193	1193		
9	Elhebal East	1212	437	0	0	26	106	0	0	0	643	492	26	0	26	79	0	0	0	589	24368	24368	1212	1212	1212	1212		
10	Gnabit Elhebel East	701	314	0	0	4	34	0	0	0	349	353	13	0	4	25	0	0	0	306	15751	18264	701	701	701	701		
11	Elalia New	1368	468	0	0	64	146	0	0	0	690	527	9	0	64	109	0	0	0	659	28296	31176	1368	1368	1368	1368		
12	Elawima	307	2	0	0	35	73	0	0	0	197	2	12	0	35	54	0	0	0	204	3464	3376	307	307	307	307		
13	Elqabia	496	128	0	0	28	52	0	0	0	288	144	8	0	28	39	0	0	0	277	8457	9351	496	496	496	496		
14	Metawe	296	0	0	7	110	0	0	0	179	0	1	0	7	39	0	0	0	206	3523	28084	296	296	296	296			
15	Ganabit Elhebel West	325	226	0	0	12	9	0	0	0	78	254	0	0	12	9	0	0	0	50	11185	12883	325	325	325	325		
16	Elishekh Branch	524	292	0	0	41	40	0	0	0	191	328	5	0	0	30	0	0	0	161	14801	16820	524	524	524	524		
17	Elkarnak East	1940	780	0	0	31	197	0	0	0	932	878	25	0	31	147	0	0	0	859	43203	48543	1940	1940	1940	1940		
18	Ganabit Elkarnak East	1190	544	0	0	18	80	0	0	0	548	613	20	0	18	60	0	0	0	479	28294	32532	1190	1190	1190	1190		
19	Eiroda	240	97	0	0	39	0	0	0	109	3	0	0	29	0	0	0	0	99	5675	6219	240	240	240	240			
20	Eloxour	3407	1859	0	0	22	282	0	0	0	1244	2091	38	0	22	211	0	0	0	1045	95602	108806	3407	3407	3407	3407		
21	Ganabit Elkarnak West	1333	729	0	0	4	104	0	0	0	556	820	18	0	4	78	0	0	0	473	37136	42461	1393	1393	1393	1393		
22	Ganabit Elkarnak (1)	1533	84	0	0	1	7	0	0	0	61	94	2	0	1	5	0	0	0	51	4149	4763	153	153	153	153		
23	Ganabit Elkarnak (2)	623	304	0	0	2	24	0	0	0	283	342	10	0	2	18	0	0	0	251	14919	17354	623	623	623	623		
24	Ganabit Elkarnak (3)	119	62	0	0	6	6	0	0	0	51	70	1	0	0	4	0	0	0	44	3062	3513	119	119	119	119		
25	Eloxour Branch 1	253	64	0	0	67	0	0	0	122	72	5	0	50	50	0	0	0	126	4976	5156	253	253	253	253			
26	Eloxour Branch 2	368	224	0	0	15	0	0	0	129	252	3	0	11	0	0	0	102	10863	12524	368	368	368	368				
27	Eloxour Branch 3	249	164	0	0	1	14	0	0	0	70	185	1	0	1	10	0	0	0	52	8077	9250	249	249	249	249		
28	Sahel Elieshy	1172	413	0	0	152	129	0	0	0	478	465	18	0	152	96	0	0	0	441	28225	31181	1172	1172	1172	1172		
29	Eizena	242	18	0	0	30	38	0	0	0	156	20	7	0	30	28	0	0	0	157	2992	3101	242	242	242	242		
30	Eloxour Branch 4	260	149	0	0	13	0	0	0	98	168	3	0	9	0	0	0	0	80	7316	8433	260	260	260	260			
31	Eloxour Branch 5	322	204	0	0	19	0	0	0	99	229	2	0	14	0	0	0	0	73	10052	11481	322	322	322	322			
32	Eloxour Branch 6	123	94	0	0	5	0	0	0	24	106	0	0	3	0	0	0	0	14	4520	5177	123	123	123	123			
33	Elsaida	330	138	0	0	12	86	0	0	0	94	155	2	0	12	64	0	0	0	97	9393	9893	330	330	330	330		
34	Eloxour Branch 7	485	360	0	0	24	0	0	0	101	405	0	0	18	0	0	0	0	62	17455	19882	485	485	485	485			
35	Elodesy	144	41	0	0	6	22	0	0	0	75	46	3	0	6	16	0	0	0	73	2767	3007	144	144	144	144		
36	Elwatta	1851	485	0	0	89	152	0	0	0	1125	546	49	0	89	114	0	0	0	1053	30116	34411	1851	1851	1851	1851		
37	Elalia	487	183	0	0	8	57	0	0	0	239	201	9	0	8	51	0	0	0	218	10483	11785	487	487	487	487		
38	Eweljab	222	79	0	0	7	39	0	0	0	97	89	3	0	7	35	0	0	0	88	5076	5690	222	222	222	222		
39	Syalt Baran	101	0	0	1	29	0	0	0	71	0	3	0	1	26	0	0	0	71	900	933	101	101	101	101			
40	Nile	623	160	0	0	241	47	0	0	0	504	180	6	0	241	42	0	0	0	154	17041	18582	623	623	623	623		
41	Ground Water	727	146	0	0	5	10	0	0	0	504	164	22	0	5	64	0	0	0	472	9108	10725	727	727	727	727		
42	Elkabia	94	16	0	0	10	4	0	0	0	64	18	3	0	10	3	0	0	0	60	1204	1404	94	94	94	94		
43	Elbiadia	7	0	0	0	3	0	0	0	0	4	0	0	0	0	2	0	0	0	5	90	62	7	7	7	7		
Check Sums:				29317	12196	0	0	1205	2624	0	0	0	13292	13716	417	0	1205	1999	0	0	0	11980	686393	775314	29317	29317	29317	29317

Table 6-4. (Continued).

Current and Expected Cropping Pattern in Luxor Irrigation District (2001)

Period	Canal	No.	Name	Area (Fed.)									Water Requirements (m^3/dy)							
				Existing pattern				Expected pattern					Fallow		0 - 2 wks		2 - 4 wks			
				Total	Sugar	Maize	Sesai	Gard	Other	Vegetable	Cereals	Fallow	Gard	Other	Vegetable	Cereals	Fallow	0 - 2 wks		
1	Elmalia	1519	886	18	0	99	58	0	0	458	985	36	0	99	72	0	0	327		
2	Elsiamia - South	104	11	2	0	25	17	0	0	0	49	13	4	0	25	23	0	0	39	
3	Sahel Elshaab	95	63	0	0	19	2	0	0	0	11	71	0	0	19	2	0	0	3	
4	Sahel Elodisat	781	485	2	0	186	10	0	0	0	98	539	4	0	186	10	0	0	42	
5	Elsiamia - North	1418	477	30	0	23	89	0	0	0	799	531	60	0	23	119	0	0	685	
6	Canabit Elbotstan	425	143	10	0	8	39	0	0	0	225	159	10	0	8	53	0	0	195	
7	Elhosha	1428	765	0	0	1	53	0	0	0	609	850	0	0	1	71	0	0	506	
8	Elhebal Main	1193	468	25	0	28	96	0	0	0	576	521	50	0	28	129	0	0	0	
9	Elhebal East	1212	492	26	0	26	79	0	0	0	589	547	52	0	26	106	0	0	481	
10	Gnabit Elhebel East	701	353	13	0	4	25	0	0	0	306	393	26	0	4	34	0	0	244	
11	Elalia New	1388	527	9	0	64	109	0	0	0	659	586	18	0	64	146	0	0	554	
12	Elawima	307	2	12	0	35	54	0	0	0	204	3	24	0	35	73	0	0	172	
13	Elqabia	486	144	8	0	28	39	0	0	0	277	160	16	0	28	52	0	0	240	
14	Metawe	296	1	1	0	7	82	0	0	0	206	0	2	0	7	110	0	0	177	
15	Ganabit Elhebel West	325	254	0	0	12	9	0	0	0	50	283	0	0	12	9	0	0	21	
16	Elshekh Branch	524	328	5	0	0	30	0	0	0	161	365	10	0	0	41	0	0	108	
17	Elkarnak East	1940	878	25	0	31	147	0	0	0	859	976	50	0	31	197	0	0	686	
18	Ganabit Elkarnak East	1190	613	20	0	18	60	0	0	0	479	681	40	0	18	80	0	0	371	
19	Elroda	760	109	3	0	2	12	0	0	0	99	122	8	0	39	90	0	0	70	
20	Eloxour	3407	2091	38	0	22	211	0	0	0	10405	2324	78	0	22	282	0	0	701	
21	Ganabit Elkarnak West	1383	820	18	0	4	78	0	0	0	473	912	37	0	4	104	0	0	336	
22	Ganabit Elkarnak (1)	1533	94	2	0	1	5	0	0	0	51	105	4	0	1	7	0	0	36	
23	Ganabit Elkarnak (2)	623	342	10	0	2	18	0	0	0	251	380	21	0	2	24	0	0	196	
24	Ganabit Elkarnak (3)	119	70	1	0	0	4	0	0	0	44	78	4	0	0	6	0	0	31	
25	Eloxour Branch 1	253	72	5	0	0	50	0	0	0	126	80	10	0	0	67	0	0	96	
26	Eloxour Branch 2	368	252	3	0	0	11	0	0	0	102	280	7	0	0	66	0	0	66	
27	Eloxour Branch 3	249	185	1	0	1	10	0	0	0	52	206	3	0	1	14	0	0	25	
28	Sahel Ellest	1172	465	18	0	152	96	0	0	0	441	517	37	0	152	129	0	0	337	
29	Elzena	242	20	7	0	30	28	0	0	0	167	23	15	0	30	38	0	0	136	
30	Eloxour Branch 4	260	168	3	0	0	9	0	0	0	80	187	6	0	0	13	0	0	54	
31	Eloxour Branch 5	322	229	2	0	0	14	0	0	0	77	255	5	0	0	66	0	0	43	
32	Eloxour Branch 6	123	106	0	0	0	3	0	0	0	14	118	0	0	0	5	0	0	0	
33	Elsaida	330	155	2	0	12	64	0	0	0	97	173	6	0	12	86	0	0	53	
34	Eloxour Branch 7	485	405	0	0	0	18	0	0	0	62	451	1	0	0	24	0	0	9	
35	Elodesy	144	46	3	0	6	42	0	0	0	73	52	6	0	6	22	0	0	58	
36	Elwalia	1851	546	49	0	89	114	0	0	0	1053	607	96	0	89	152	0	0	907	
37	Elalia	487	201	9	0	8	51	0	0	0	218	229	17	0	8	57	0	0	176	
38	Eweljab	222	89	3	0	7	35	0	0	0	88	99	7	0	7	39	0	0	70	
39	Syalt Baran	101	0	3	0	1	26	0	0	0	71	0	6	0	1	29	0	0	65	
40	Nile	623	180	6	0	241	42	0	0	0	154	201	11	0	241	47	0	0	123	
41	Ground Water	727	164	22	0	5	64	0	0	0	472	183	44	0	5	72	0	0	423	
42	Elkabia	94	18	3	0	10	3	0	0	0	60	20	5	0	10	4	0	0	55	
43	Elbiadia	7	0	0	0	2	0	0	0	0	5	0	2	0	0	3	0	0	2	
Check Sums:				29317	13716	417	0	1205	1999	0	0	0	11980	15265	838	0	1205	2624	0	0
Check Sums:				29317	13716	417	0	1205	1999	0	0	0	0	9386	786013	91733	29317	29317	29317	

Table 6-4. (Continued).

Current and Expected Cropping Pattern in Luxor Irrigation District (2001)

No	Name	Canal	Period	Area (Fed.)										Water Requirements (m^3/dy)						Check Sums				
				Total	Sugar	Mai'ad	Sesai	Gard	Other	VdC	Ri	Wheat	Fallow	Sugar	Mai'ad	Sesai	Gard	Other	VdC	Ri	Wheat	Fallow		
1	Elmala		15/19	985	36	0	99	72	0	0	0	327	985	323	0	99	112	0	0	0	0	56334	73887	
2	Elsiamia - South		104	13	4	0	25	23	0	0	0	3	71	5	0	25	26	0	0	0	0	2386	3968	
3	Sahel Elshaab		95	71	0	0	19	2	0	0	0	0	42	539	28	0	186	28	0	0	0	0	4319	4927
4	Sahel Elodisat		781	539	4	0	186	10	0	0	0	0	42	531	700	0	23	164	0	0	0	0	34240	39754
5	Elsiamia - North		14/18	531	60	0	23	119	0	0	0	0	685	531	700	0	8	38	0	0	0	0	32910	59405
6	Canabit Elbotstan		425	159	10	0	8	53	0	0	0	0	195	159	220	0	8	10187	0	0	0	0	10187	17849
7	Elhosha		14/28	850	0	0	1	71	0	0	0	0	506	850	500	0	1	77	0	0	0	0	45003	66959
8	Elhebel Main		1193	521	50	0	28	129	0	0	0	0	465	521	470	0	28	174	0	0	0	0	32637	1428
9	Elhebel East		12/12	547	52	0	26	106	0	0	0	0	484	547	555	0	26	84	0	0	0	0	51894	1193
10	Gnabit Elhebel East		701	393	26	0	4	34	0	0	0	0	244	393	275	0	4	29	0	0	0	0	33194	52854
11	Elalia New		13/88	586	18	0	64	146	0	0	0	0	554	586	440	0	64	278	0	0	0	0	36883	1368
12	Elawima		3/07	3	24	0	35	73	0	0	0	0	172	3	167	0	35	102	0	0	0	0	4382	307
13	Elqabia		4/86	160	16	0	28	52	0	0	0	0	240	160	204	0	28	104	0	0	0	0	11135	496
14	Metawe		0	2	0	0	7	110	0	0	0	0	177	0	160	0	7	129	0	0	0	0	3800	296
15	Ganabit Elhebel West		325	283	0	0	12	9	0	0	0	0	21	283	10	0	12	20	0	0	0	0	14941	325
16	Elshiek Branch		524	365	10	0	0	41	0	0	0	0	108	365	111	0	0	48	0	0	0	0	19913	524
17	Elkarnak East		19/40	976	50	0	31	197	0	0	0	0	686	976	564	0	31	369	0	0	0	0	57788	87619
18	Ganabit Elkarnak East		1190	681	40	0	18	80	0	0	0	0	371	681	211	0	18	280	0	0	0	0	38489	55802
19	Elroda		240	122	8	0	0	71	0	0	0	0	71	122	35	0	83	83	0	0	0	0	7593	240
20	Eloxour		3/407	2324	78	0	22	282	0	0	0	0	701	2324	725	0	22	336	0	0	0	0	128642	3407
21	Ganabit Elkarnak West		13/33	912	37	0	4	104	0	0	0	0	336	912	240	0	4	237	0	0	0	0	50276	1393
22	Ganabit Elkarnak (1)		153	105	4	0	1	7	0	0	0	0	36	105	25	0	1	22	0	0	0	0	5642	153
23	Ganabit Elkarnak (2)		623	380	21	0	2	24	0	0	0	0	196	380	155	0	2	86	0	0	0	0	20499	29633
24	Ganabit Elkarnak (3)		119	78	4	0	0	6	0	0	0	0	31	78	20	0	21	0	0	0	0	4227	119	
25	Eloxour Branch 1		253	80	10	0	0	67	0	0	0	0	96	80	111	0	0	62	0	0	0	0	6417	253
26	Eloxour Branch 2		368	280	7	0	0	15	0	0	0	0	66	280	54	0	0	34	0	0	0	0	14739	368
27	Eloxour Branch 3		249	206	3	0	1	14	0	0	0	0	25	206	37	0	1	5	0	0	0	0	10917	249
28	Sahel Elieshy		1/12	517	37	0	152	129	0	0	0	0	337	517	245	0	152	258	0	0	0	0	36576	1172
29	Elzena		242	23	15	0	30	38	0	0	0	0	136	23	105	0	30	84	0	0	0	0	3886	242
30	Eloxour Branch 4		260	187	6	0	0	13	0	0	0	0	54	187	20	0	0	53	0	0	0	0	9971	260
31	Eloxour Branch 5		322	255	5	0	0	19	0	0	0	0	43	255	35	0	0	32	0	0	0	0	13556	322
32	Eloxour Branch 6		123	118	0	0	0	5	0	0	0	0	0	118	0	0	0	5	0	0	0	0	6088	123
33	Elsaida		330	173	6	0	12	86	0	0	0	0	53	173	86	0	12	59	0	0	0	0	12029	330
34	Eloxour Branch 7		485	451	1	0	0	24	0	0	0	0	9	451	14	0	0	20	0	0	0	0	23456	485
35	Elodesy		144	52	6	0	6	22	0	0	0	0	58	52	24	0	6	62	0	0	0	0	3690	144
36	Elwatta		185/1	607	96	0	89	152	0	0	0	0	907	607	605	0	89	550	0	0	0	0	41125	185/1
37	Elalia		487	229	17	0	8	57	0	0	0	0	176	229	135	0	8	115	0	0	0	0	14060	21678
38	Eweljab		222	99	7	0	7	39	0	0	0	0	70	99	16	0	7	100	0	0	0	0	6655	222
39	Syalt Baran		101	0	6	0	1	29	0	0	0	0	65	0	76	0	1	24	0	0	0	0	1119	101
40	Nile		623	201	11	0	241	47	0	0	0	0	123	201	81	0	241	100	0	0	0	0	20604	623
41	Ground Water		727	183	44	0	5	423	183	0	0	0	5	217	0	0	0	5	0	0	0	0	28648	727
42	Elkabia		94	20	5	0	10	4	0	0	0	0	55	20	63	0	10	1	0	0	0	1624	94	
43	Elbiadia		7	0	2	0	0	3	0	0	0	0	2	0	7	0	0	0	0	0	0	158	7	
Check Sums:			29317	15265	838	0	1205	2624	0	0	0	0	9355	15265	8219	0	1205	4628	0	0	0	0	29317	29317
Check Sums:																						1339053	1339053	

Table 6-4. (Continued).

Period	Canal	No	Name	Area (Fed.)											Water Requirements (m³/3dy)											Check Sums				
				Total	Sugar	Maiza	Sesai	Gard	Other	Ve	Cq	Ri	Wheat	Fallow	Sugar	Maiza	Sesai	Gard	Other	Ve	Cq	Ri	Wheat	Fallow	0 - 2 wks	2 - 4 wks				
1	Elmala	1519	985	323	0	99	112	0	0	0	985	323	0	99	112	0	0	0	0	0	0	0	0	0	74263	70236	1519	1519		
2	Eislamia - South	104	13	40	0	25	26	0	0	0	0	13	5	0	25	26	0	0	0	0	0	0	0	0	4015	3645	104	104		
3	Sahel Elshaab	95	5	0	19	0	0	0	0	0	0	71	0	19	0	0	0	0	0	0	0	0	0	0	4759	4759	95	95		
4	Sahel Elodisat	781	539	28	0	186	28	0	0	0	539	28	0	186	28	0	0	0	0	0	0	0	0	0	39786	38865	781	781		
5	Eislamia - North	1418	531	700	0	23	164	0	0	0	531	700	0	23	164	0	0	0	0	0	0	0	0	0	60245	53335	1418	1418		
6	Canabit Elbotstan	425	159	220	0	8	38	0	0	0	0	159	220	0	8	38	0	0	0	0	0	0	0	0	0	18125	15968	425	425	
7	Elhosha	1428	850	500	0	1	77	0	0	0	0	850	500	0	1	77	0	0	0	0	0	0	0	0	0	67615	61505	1428	1428	
8	Elhebal Main	1193	521	470	0	28	174	0	0	0	0	521	470	0	28	174	0	0	0	0	0	0	0	0	0	52446	48021	1193	1193	
9	Elhebal East	1212	547	555	0	26	84	0	0	0	0	547	555	0	26	84	0	0	0	0	0	0	0	0	0	53515	48370	1212	1212	
10	Gnabit Elhebel East	701	393	275	0	4	29	0	0	0	0	393	275	0	4	29	0	0	0	0	0	0	0	0	0	32567	29862	701	701	
11	Elalia New	1368	586	440	0	64	278	0	0	0	0	586	440	0	64	278	0	0	0	0	0	0	0	0	0	60353	55322	1368	1368	
12	Elawima	307	3	167	0	35	102	0	0	0	0	3	167	0	35	102	0	0	0	0	0	0	0	0	0	10811	9574	307	307	
13	Elqibbia	496	160	204	0	28	104	0	0	0	0	160	204	0	28	104	0	0	0	0	0	0	0	0	0	18736	496	496	496	
14	Metawe	296	160	0	0	0	0	0	0	0	0	160	0	0	7	129	0	0	0	0	0	0	0	0	0	10310	8898	296	296	
15	Ganabit Elhebel West	325	283	10	12	20	0	0	0	0	283	10	0	12	20	0	0	0	0	0	0	0	0	0	0	17456	16898	325	325	
16	Elsheikh Branch	524	365	111	0	0	48	0	0	0	0	365	111	0	0	48	0	0	0	0	0	0	0	0	0	25989	24536	524	524	
17	Elkarnak East	1940	976	564	0	31	369	0	0	0	0	976	564	0	31	369	0	0	0	0	0	0	0	0	0	88294	82103	1940	1940	
18	Ganabit Elkarnak East	1190	681	211	0	18	280	0	0	0	0	681	211	0	18	280	0	0	0	0	0	0	0	0	0	56027	53533	1190	1190	
19	Elroda	1240	122	35	0	0	83	0	0	0	0	122	35	0	0	83	0	0	0	0	0	0	0	0	0	10965	10531	240	240	
20	Eloxour	3407	2324	725	0	22	336	0	0	0	0	2324	725	0	22	336	0	0	0	0	0	0	0	0	0	167950	158817	3407	3407	
21	Ganabit Elkarnak West	1393	912	240	0	4	237	0	0	0	0	912	240	0	4	237	0	0	0	0	0	0	0	0	0	67918	64794	1393	1393	
22	Ganabit Elkarnak (1)	153	105	25	0	1	22	0	0	0	0	105	25	0	1	22	0	0	0	0	0	0	0	0	0	7565	7230	153	153	
23	Ganabit Elkarnak (2)	623	380	155	0	2	86	0	0	0	0	380	155	0	2	86	0	0	0	0	0	0	0	0	0	29709	28009	623	623	
24	Ganabit Elkarnak (3)	119	78	20	0	0	21	0	0	0	0	78	20	0	0	21	0	0	0	0	0	0	0	0	0	5790	5542	119	119	
25	Eloxour Branch 1	2324	80	111	0	0	62	0	0	0	0	80	111	0	0	62	0	0	0	0	0	0	0	0	0	10447	9417	253	253	
26	Eloxour Branch 2	2683	280	54	0	0	34	0	0	0	0	280	54	0	0	34	0	0	0	0	0	0	0	0	0	18767	17942	368	368	
27	Eloxour Branch 3	249	206	37	0	1	5	0	0	0	0	206	37	0	1	5	0	0	0	0	0	0	0	0	0	13049	12442	249	249	
28	Sahel Ellesty	1172	517	245	0	152	258	0	0	0	0	517	245	0	152	258	0	0	0	0	0	0	0	0	52610	49851	1172	1172		
29	Eizena	242	23	105	0	30	84	0	0	0	0	23	105	0	30	84	0	0	0	0	0	0	0	0	0	9010	8170	242	242	
30	Eloxour Branch 4	260	187	20	0	0	53	0	0	0	0	187	20	0	0	53	0	0	0	0	0	0	0	0	0	13062	12664	260	260	
31	Eloxour Branch 5	322	255	35	0	0	32	0	0	0	0	255	35	0	0	32	0	0	0	0	0	0	0	0	0	16650	16005	322	322	
32	Eloxour Branch 6	123	118	0	0	5	0	0	0	0	0	118	0	0	0	5	0	0	0	0	0	0	0	0	0	6815	6634	123	123	
33	Eisalda	330	173	86	0	12	59	0	0	0	0	173	86	0	12	59	0	0	0	0	0	0	0	0	0	15211	14183	330	330	
34	Eloxour Branch 7	485	451	14	0	0	20	0	0	0	0	451	14	0	0	20	0	0	0	0	0	0	0	0	0	26548	25738	485	485	
35	Elodesy	144	52	24	0	6	62	0	0	0	0	52	24	0	6	62	0	0	0	0	0	0	0	0	0	6167	5919	144	144	
36	Elwatta	1851	607	605	0	89	550	0	0	0	0	607	605	0	89	550	0	0	0	0	0	0	0	0	0	77559	72245	1851	1851	
37	Elalia	487	229	135	0	8	115	0	0	0	0	229	135	0	8	115	0	0	0	0	0	0	0	0	0	21833	20437	487	487	
38	Ewelieab	222	99	16	0	7	100	0	0	0	0	99	16	0	7	100	0	0	0	0	0	0	0	0	0	9921	9660	222	222	
39	Syalt Baran	101	0	76	0	1	24	0	0	0	0	0	76	0	1	24	0	0	0	0	0	0	0	0	0	3439	2835	101	101	
40	Nile	623	201	81	0	24	1	100	0	0	0	0	201	81	0	24	1	100	0	0	0	0	0	0	0	0	27345	26144	623	623
41	Ground Water	727	183	322	0	5	217	0	0	0	0	183	322	0	5	217	0	0	0	0	0	0	0	0	0	0	26365	26013	727	727
42	Elklabia	94	20	63	0	10	1	0	0	0	0	20	63	0	10	1	0	0	0	0	0	0	0	0	0	3160	3160	94	94	
43	Elbiadia	7	0	7	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	221	192	7	7
Check Sums:											Check Sums:											29317		29317		29317				
APRP Water Policy Program											Matching Irrigation Supplies and Demands											6-35		6-35		6-35				

Table 6-4. (Continued).

Current and Expected Cropping Pattern in Luxor Irrigation District (2001)

Period	Canal	No	Name	Area (Fed.)												Water Requirements (m^3/dy)						Check Sums		
				Total	Sugar	Maiza	Sesai	Gard	Other	VeCRI	Wheat	Fallow	Sugar	Maiza	Sesai	Gard	Other	VeCRI	Wheat	Fallow	0 - 2 wks	2 - 4 wks	Existing Expected	
1	Elmala	1519	985	323	0	99	112	0	0	0	985	323	0	99	112	0	0	0	0	0	0	70236	70432	1519
2	Elsiamia - South	104	13	50	0	25	26	0	0	0	13	40	0	25	26	0	0	0	0	0	0	3645	3878	104
3	Sahel Elshaab	95	71	0	19	0	0	0	0	0	71	5	0	19	0	0	0	0	0	0	0	4759	4612	95
4	Sahel Elodisat	781	539	28	0	186	28	0	0	0	539	28	0	186	28	0	0	0	0	0	0	38565	37247	781
5	Elsiamia - North	1418	531	700	0	23	164	0	0	0	531	700	0	23	164	0	0	0	0	0	0	53835	58322	1418
6	Canabit Elbotstan	425	159	220	0	8	38	0	0	0	159	220	0	8	38	0	0	0	0	0	0	15988	17383	425
7	Elhosha	1428	850	500	0	1	77	0	0	0	850	500	0	1	77	0	0	0	0	0	0	61505	63808	1428
8	Elhebel Main	1193	521	470	0	28	174	0	0	0	521	470	0	28	174	0	0	0	0	0	0	48021	50535	1193
9	Elhebel East	1212	547	555	0	26	84	0	0	0	547	555	0	26	84	0	0	0	0	0	0	48370	51689	1212
10	Gnabit Elhebel East	701	393	275	0	4	29	0	0	0	393	275	0	4	29	0	0	0	0	0	0	29862	31264	701
11	Elalia New	1388	586	440	0	64	278	0	0	0	586	440	0	64	278	0	0	0	0	0	0	55322	57280	1368
12	Elawima	307	3	167	0	35	102	0	0	0	3	167	0	35	102	0	0	0	0	0	0	9574	10769	307
13	Elqabia	486	160	204	0	28	104	0	0	0	160	204	0	28	104	0	0	0	0	0	0	18736	19920	496
14	Metawe	296	0	160	0	0	0	0	0	0	160	0	0	7	129	0	0	0	0	0	0	8698	9884	296
15	Gnabit Elhebel West	325	283	10	0	12	20	0	0	0	283	10	0	12	20	0	0	0	0	0	0	16905	16307	325
16	Elshekh Branch	524	365	111	0	0	48	0	0	0	365	111	0	0	48	0	0	0	0	0	0	24536	24589	524
17	Elkarnak East	1940	976	564	0	31	369	0	0	0	976	564	0	31	369	0	0	0	0	0	0	82103	84125	1940
18	Gnabit Elkarnak East	1190	681	211	0	18	280	0	0	0	681	211	0	18	280	0	0	0	0	0	0	53533	53329	1190
19	Elroda	1240	122	35	0	0	83	0	0	0	122	35	0	0	83	0	0	0	0	0	0	10531	1240	240
20	Eloxour	3407	2324	725	0	22	336	0	0	0	2324	725	0	22	336	0	0	0	0	0	0	158817	159221	3407
21	Gnabit Elkarnak West	1383	912	240	0	4	237	0	0	0	912	240	0	4	237	0	0	0	0	0	0	64794	64415	1393
22	Gnabit Elkarnak (1)	153	105	25	0	1	22	0	0	0	105	25	0	1	22	0	0	0	0	0	0	7230	7170	153
23	Gnabit Elkarnak (2)	623	380	155	0	2	86	0	0	0	380	155	0	2	86	0	0	0	0	0	0	28009	28337	623
24	Gnabit Elkarnak (3)	119	78	20	0	0	21	0	0	0	78	20	0	0	21	0	0	0	0	0	0	5542	5512	119
25	Eloxour Branch 1	253	80	111	0	0	62	0	0	0	80	111	0	0	62	0	0	0	0	0	0	9417	10091	253
26	Eloxour Branch 2	368	280	54	0	0	34	0	0	0	280	54	0	0	34	0	0	0	0	0	0	17942	17724	368
27	Eloxour Branch 3	249	206	37	0	1	5	0	0	0	206	37	0	1	5	0	0	0	0	0	0	12442	12290	249
28	Sahel Ellesty	1172	517	245	0	152	258	0	0	0	517	245	0	152	258	0	0	0	0	0	0	49851	50135	1172
29	Elzena	242	23	105	0	30	84	0	0	0	23	105	0	30	84	0	0	0	0	0	0	8170	8837	242
30	Eloxour Branch 4	260	187	20	0	0	53	0	0	0	187	20	0	0	53	0	0	0	0	0	0	12664	12330	260
31	Eloxour Branch 5	322	255	35	0	0	32	0	0	0	255	35	0	0	32	0	0	0	0	0	0	16005	15684	322
32	Eloxour Branch 6	123	118	0	0	5	0	0	0	0	118	0	0	5	0	0	0	0	0	0	6634	6361	123	
33	Elsaida	330	173	86	0	12	59	0	0	0	173	86	0	12	59	0	0	0	0	0	0	14183	14434	330
34	Eloxour Branch 7	485	451	14	0	0	20	0	0	0	451	14	0	0	20	0	0	0	0	0	0	25738	24819	485
35	Elodesy	144	52	24	0	6	62	0	0	0	52	24	0	6	62	0	0	0	0	0	0	5919	5901	144
36	Elwatta	1851	607	605	0	89	559	0	0	0	607	605	0	89	559	0	0	0	0	0	0	72245	75010	1851
37	Elalia	487	229	135	0	8	115	0	0	0	229	135	0	8	115	0	0	0	0	0	0	20437	20879	487
38	Eweljab	222	99	16	0	7	100	0	0	0	99	16	0	7	100	0	0	0	0	0	0	9660	9415	222
39	Syalt Baran	101	0	76	0	1	24	0	0	0	0	76	0	1	24	0	0	0	0	0	0	2835	3447	101
40	Nile	623	201	81	0	241	100	0	0	0	201	81	0	241	100	0	0	0	0	0	0	26144	25836	623
41	Ground Water	727	183	322	0	5	217	0	0	0	183	322	0	5	217	0	0	0	0	0	0	26365	28346	727
42	Elkabia	94	20	63	0	10	1	0	0	0	20	63	0	10	1	0	0	0	0	0	0	3160	3629	94
43	Elbiadia	7	0	7	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	192	258	7
Check Sums:												29317	15265	8219	0	1205	4628	0	0	0	0	1259098	1285887	29317
Check Sums:												29317	0	0	0	0	0	0	0	0	0	29317	29317	29317

Table 6-4. (Continued).

Current and Expected Cropping Pattern in Luxor Irrigation District (2001)

Period	Canal	No	Name	Area (Fed.)										Water Requirements (m^3/dy)								
				Total	Sugar	Maiza	Sesai	Gard	Other	Vegetable	Corn	Wheat	Fallow	Sugar	Maiza	Sesai	Gard	Other	Vegetable	Corn	Wheat	Fallow
1	Elmala	1519	985	323	0	99	112	0	0	0	985	323	0	99	112	0	0	0	0	0	0	0
2	Elsiamia - South	104	13	50	0	25	26	0	0	0	13	40	0	25	26	0	0	0	0	0	0	0
3	Sahel Elshaab	95	5	0	19	0	0	0	0	0	71	5	0	19	0	0	0	0	0	0	0	0
4	Sahel Elodisat	781	539	28	0	186	28	0	0	0	539	28	0	186	28	0	0	0	0	0	0	0
5	Elsiamia - North	1418	531	700	0	23	164	0	0	0	531	700	0	23	164	0	0	0	0	0	0	0
6	Canabit Elbotstan	425	159	220	0	8	38	0	0	0	159	220	0	8	38	0	0	0	0	0	0	0
7	Elhosha	1428	850	500	0	1	77	0	0	0	850	500	0	1	77	0	0	0	0	0	0	0
8	Elhebel Main	1193	521	470	0	28	174	0	0	0	521	470	0	28	174	0	0	0	0	0	0	0
9	Elhebel East	1212	547	555	0	26	84	0	0	0	547	555	0	26	84	0	0	0	0	0	0	0
10	Gnabit Elhebel East	701	393	275	0	4	29	0	0	0	393	275	0	4	29	0	0	0	0	0	0	0
11	Elalia New	1388	586	440	0	64	278	0	0	0	586	440	0	64	278	0	0	0	0	0	0	0
12	Elawima	307	3	167	0	35	102	0	0	0	3	167	0	35	102	0	0	0	0	0	0	0
13	Elqabia	486	160	204	0	28	104	0	0	0	160	204	0	28	104	0	0	0	0	0	0	0
14	Metawe	296	0	160	0	0	0	0	0	0	160	0	0	7	129	0	0	0	0	0	0	0
15	Gnabit Elhebel West	325	283	10	0	12	20	0	0	0	283	10	0	12	20	0	0	0	0	0	0	0
16	Elshekh Branch	524	365	111	0	0	48	0	0	0	365	111	0	0	48	0	0	0	0	0	0	0
17	Elkarnak East	1940	976	564	0	31	369	0	0	0	976	564	0	31	369	0	0	0	0	0	0	0
18	Gnabit Elkarnak East	1190	681	211	0	18	280	0	0	0	681	211	0	18	280	0	0	0	0	0	0	0
19	Elroda	190	122	35	0	0	83	0	0	0	122	35	0	0	83	0	0	0	0	0	0	0
20	Eloxour	3407	2324	725	0	22	336	0	0	0	2324	725	0	22	336	0	0	0	0	0	0	0
21	Gnabit Elkarnak West	1383	912	240	0	4	237	0	0	0	912	240	0	4	237	0	0	0	0	0	0	0
22	Gnabit Elkarnak (1)	153	105	25	0	1	22	0	0	0	105	25	0	1	22	0	0	0	0	0	0	0
23	Gnabit Elkarnak (2)	623	380	155	0	2	86	0	0	0	380	155	0	2	86	0	0	0	0	0	0	0
24	Gnabit Elkarnak (3)	119	78	20	0	0	21	0	0	0	78	20	0	0	21	0	0	0	0	0	0	0
25	Eloxour Branch 1	253	80	111	0	0	62	0	0	0	80	111	0	0	62	0	0	0	0	0	0	0
26	Eloxour Branch 2	368	280	54	0	0	34	0	0	0	280	54	0	0	34	0	0	0	0	0	0	0
27	Eloxour Branch 3	249	206	37	0	1	5	0	0	0	206	37	0	1	5	0	0	0	0	0	0	0
28	Sahel Elieshy	1172	517	245	0	152	258	0	0	0	517	245	0	152	258	0	0	0	0	0	0	0
29	Elzena	242	23	105	0	30	84	0	0	0	23	105	0	30	84	0	0	0	0	0	0	0
30	Eloxour Branch 4	260	187	20	0	0	53	0	0	0	187	20	0	0	53	0	0	0	0	0	0	0
31	Eloxour Branch 5	322	255	35	0	0	32	0	0	0	255	35	0	0	32	0	0	0	0	0	0	0
32	Eloxour Branch 6	123	118	0	0	5	0	0	0	0	118	0	0	5	0	0	0	0	0	0	0	0
33	Elsaida	330	173	86	0	12	59	0	0	0	173	86	0	12	59	0	0	0	0	0	0	0
34	Eloxour Branch 7	485	451	14	0	0	20	0	0	0	451	14	0	0	20	0	0	0	0	0	0	0
35	Elodesy	144	52	24	0	6	62	0	0	0	52	24	0	6	62	0	0	0	0	0	0	0
36	Elwatta	1851	607	605	0	89	559	0	0	0	607	605	0	89	559	0	0	0	0	0	0	0
37	Elalia	487	229	135	0	8	115	0	0	0	229	135	0	8	115	0	0	0	0	0	0	0
38	Eweljab	222	99	16	0	7	100	0	0	0	99	16	0	7	100	0	0	0	0	0	0	0
39	Syalt Baran	101	0	76	0	1	24	0	0	0	0	76	0	1	24	0	0	0	0	0	0	0
40	Nile	623	201	81	0	241	100	0	0	0	201	81	0	241	100	0	0	0	0	0	0	0
41	Ground Water	727	183	322	0	5	217	0	0	0	183	322	0	5	217	0	0	0	0	0	0	0
42	Elkabia	94	20	63	0	10	1	0	0	0	20	63	0	10	1	0	0	0	0	0	0	0
43	Elbiadia	7	0	7	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0
Check Sums:				29317	15265	8219	0	1205	4628	0	0	0	15265	8219	0	1205	4628	0	0	0	29317	29317
Check Sums:																						

Table 6-4. (Continued).

Current and Expected Cropping Pattern in Luxor Irrigation District (2001)

Period	Canal	No	Name	Area (Fed.)										Water Requirements (m^3/dy)						Check Sums				
				Total	Sugar	Maiza	Sesai	Gard	Other	VeCRI	Wheat	Fallow	Sugar	Maiza	Sesai	Gard	Other	VeCRI	Wheat	Fallow	0 - 2 wks	2 - 4 wks		
1	Elmala	1519	985	323	0	99	112	0	0	0	985	323	0	99	112	0	0	0	0	0	74245	73397	1519	
2	Elsiamia - South	104	13	50	0	25	26	0	0	0	13	40	0	25	26	0	0	0	0	0	4355	4500	104	
3	Sahel Elshaab	95	71	5	0	19	0	0	0	0	71	5	0	19	0	0	0	0	0	0	4677	4698	95	
4	Sahel Elodisat	781	539	28	0	186	28	0	0	0	539	28	0	186	28	0	0	0	0	0	37588	37663	781	
5	Elsiamia - North	1418	531	700	0	23	164	0	0	0	531	700	0	23	164	0	0	0	0	0	66780	69380	1418	
6	Canabit Elbotstan	425	159	220	0	8	38	0	0	0	159	220	0	8	38	0	0	0	0	0	20117	20969	425	
7	Elhosha	1428	850	500	0	1	77	0	0	0	850	500	0	1	77	0	0	0	0	0	70318	72418	1428	
8	Elhebel Main	1193	521	470	0	28	174	0	0	0	521	470	0	28	174	0	0	0	0	0	56108	57799	1193	
9	Elhebel East	1212	547	555	0	26	84	0	0	0	547	555	0	26	84	0	0	0	0	0	58347	60383	1212	
10	Gnabit Elhebel East	701	393	275	0	4	29	0	0	0	393	275	0	4	29	0	0	0	0	0	34560	35568	701	
11	Elalia New	1368	586	440	0	64	278	0	0	0	586	440	0	64	278	0	0	0	0	0	62812	64558	1368	
12	Elawima	307	3	167	0	35	102	0	0	0	3	167	0	35	102	0	0	0	0	0	12681	13246	307	
13	Elqabia	486	160	204	0	28	104	0	0	0	160	204	0	28	104	0	0	0	0	0	22401	23167	496	
14	Metawe	296	0	160	0	0	0	0	0	0	160	0	0	7	129	0	0	0	0	0	11945	12606	296	
15	Gnabit Elhebel West	325	283	10	0	12	20	0	0	0	283	10	0	12	20	0	0	0	0	0	16437	16479	325	
16	Elshekh Branch	524	365	111	0	0	48	0	0	0	365	111	0	0	48	0	0	0	0	0	25925	26335	524	
17	Elkarnak East	1940	976	564	0	31	369	0	0	0	976	564	0	31	369	0	0	0	0	0	90922	93007	1940	
18	Gnabit Elkarnak East	1190	681	211	0	18	280	0	0	0	681	211	0	18	280	0	0	0	0	0	56460	56299	1190	
19	Elroda	19	120	35	0	0	83	0	0	0	122	35	0	0	83	0	0	0	0	0	10810	10914	240	
20	Eloxour	3407	2324	725	0	22	336	0	0	0	2324	725	0	22	336	0	0	0	0	0	167813	170418	3407	
21	Gnabit Elkarnak West	1333	912	240	0	4	237	0	0	0	912	240	0	4	237	0	0	0	0	0	67138	67938	1393	
22	Gnabit Elkarnak (1)	153	105	25	0	1	22	0	0	0	105	25	0	1	22	0	0	0	0	0	7452	7534	153	
23	Gnabit Elkarnak (2)	623	380	155	0	2	86	0	0	0	380	155	0	2	86	0	0	0	0	0	30128	30662	623	
24	Gnabit Elkarnak (3)	119	78	20	0	0	21	0	0	0	78	20	0	0	21	0	0	0	0	0	5733	5797	119	
25	Eloxour Branch 1	253	80	111	0	0	62	0	0	0	80	111	0	0	62	0	0	0	0	0	11427	11837	253	
26	Eloxour Branch 2	368	280	54	0	0	34	0	0	0	280	54	0	0	34	0	0	0	0	0	18352	18541	368	
27	Eloxour Branch 3	249	206	37	0	1	5	0	0	0	206	37	0	1	5	0	0	0	0	0	12741	12881	249	
28	Sahel Elieshy	1172	517	245	0	152	258	0	0	0	517	245	0	152	258	0	0	0	0	0	52923	53744	1172	
29	Elzena	242	23	105	0	30	84	0	0	0	23	105	0	30	84	0	0	0	0	0	10043	10400	242	
30	Eloxour Branch 4	260	187	20	0	0	53	0	0	0	187	20	0	0	53	0	0	0	0	0	12525	12575	260	
31	Eloxour Branch 5	322	255	35	0	0	32	0	0	0	255	35	0	0	32	0	0	0	0	0	16087	16207	322	
32	Eloxour Branch 6	123	118	0	0	0	5	0	0	0	118	0	0	0	5	0	0	0	0	0	6361	6361	123	
33	Elsaida	330	173	86	0	12	59	0	0	0	173	86	0	12	59	0	0	0	0	0	15492	15822	330	
34	Eloxour Branch 7	485	451	14	0	0	20	0	0	0	451	14	0	0	20	0	0	0	0	0	24992	25047	485	
35	Elodesy	144	52	24	0	6	62	0	0	0	52	24	0	6	62	0	0	0	0	0	6148	6215	144	
36	Elwatta	1851	607	605	0	89	559	0	0	0	607	605	0	89	559	0	0	0	0	0	81835	83829	1851	
37	Elalia	487	229	135	0	8	115	0	0	0	229	135	0	8	115	0	0	0	0	0	22449	22918	487	
38	Eweljab	222	99	16	0	7	100	0	0	0	99	16	0	7	100	0	0	0	0	0	9549	9578	222	
39	Syalt Baran	101	0	76	0	1	24	0	0	0	0	76	0	1	24	0	0	0	0	0	4371	4656	101	
40	Nile	623	201	81	0	241	100	0	0	0	201	81	0	241	100	0	0	0	0	0	26769	27045	623	
41	Ground Water	727	183	322	0	5	217	0	0	0	183	322	0	5	217	0	0	0	0	0	32058	33161	727	
42	Elkabia	94	20	63	0	10	1	0	0	0	20	63	0	10	1	0	0	0	0	0	4393	4628	94	
43	Elbiadia	7	0	7	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	332	353	7	
	Check Sums:	29317	15265	8219	0	1205	4628	0	0	0	0	15265	8219	0	1205	4628	0	0	0	0	0	1383756	1413530	29317
	Check Sums:																							

Table 6-4. (Continued).

Period	Area (Fed.)	Current and Expected Cropping Pattern in Luxor Irrigation District (2001)													
		Water Requirements (m³/3day)						Check Sums Existing Expected							
		Existing pattern			Expected pattern			0 - 2 wks			2 - 4 wks				
Canal	No Name	Total	Sugar	Maize	Sesai	Gard	Other	Vegetable	CdR	Wheat	Fallow	Sugar	Maize	Sesai	
1 Elmalia	1519	985	323	0	0	0	0	99	112	0	0	0	0	0	
2 Elsiamia - South	104	13	40	0	25	26	0	0	0	13	40	0	25	0	
3 Sähel Elshaab	95	71	5	0	19	0	0	0	0	71	5	0	19	0	
4 Sahel Elodisat	781	539	28	0	186	28	0	0	0	539	28	0	186	0	
5 Elsiamia - North	1418	531	700	0	23	164	0	0	0	531	700	0	23	164	
6 Ganabit Elbostan	1428	159	220	0	8	38	0	0	0	159	220	0	8	38	
7 Elhosha	1428	850	500	0	1	77	0	0	0	850	500	0	1	77	
8 Elhebel Main	1193	521	470	0	28	174	0	0	0	521	470	0	28	174	
9 Elhebel East	1212	547	555	0	26	84	0	0	0	547	555	0	26	84	
10 Grabit Elhebel East	701	1	393	275	0	4	29	0	0	0	393	275	0	4	29
11 Elalia New	1368	586	440	0	64	278	0	0	0	586	440	0	64	278	
12 Elawima	307	3	167	0	35	102	0	0	0	3	167	0	35	102	
13 Elgabia	496	160	204	0	28	104	0	0	0	160	204	0	28	104	
14 Metawa	296	0	160	0	7	129	0	0	0	0	160	0	7	129	
15 Ganabit Elhebel West	325	283	10	0	12	20	0	0	0	283	10	0	12	20	
16 Elsheikh Branach	524	365	111	0	0	48	0	0	0	365	111	0	0	48	
17 Elkarnak East	1940	976	564	0	31	369	0	0	0	976	564	0	31	369	
18 Ganabit Elkarnak East	1190	681	211	0	18	280	0	0	0	681	211	0	18	280	
19 Elroda	240	122	35	0	0	83	0	0	0	122	35	0	0	83	
20 Elwour	3407	2324	725	0	22	336	0	0	0	2324	725	0	22	336	
21 Ganabit Elkarnak West	1393	912	240	0	4	237	0	0	0	912	240	0	4	237	
22 Ganabit Elkarnak (1)	153	105	25	0	1	22	0	0	0	105	25	0	1	22	
23 Ganabit Elkarnak (2)	623	380	155	0	2	86	0	0	0	380	155	0	2	86	
24 Ganabit Elkarnak (3)	119	78	20	0	0	21	0	0	0	78	20	0	0	21	
25 Elwour Branch 1	253	80	111	0	0	62	0	0	0	80	111	0	0	62	
26 Elwour Branch 2	368	280	54	0	0	34	0	0	0	280	54	0	0	34	
27 Elwour Branch 3	249	206	37	0	1	5	0	0	0	206	37	0	1	5	
28 Saheit Elesty	1172	517	245	0	152	258	0	0	0	517	245	0	152	258	
29 Elzena	242	23	105	0	30	84	0	0	0	23	105	0	30	84	
30 Elwour Branch 4	260	187	20	0	0	53	0	0	0	187	20	0	0	53	
31 Elwour Branch 5	322	255	35	0	0	32	0	0	0	255	35	0	0	32	
32 Elwour Branch 6	123	118	0	0	0	5	0	0	0	118	0	0	0	5	
33 Elsada	330	173	86	0	12	59	0	0	0	173	86	0	12	59	
34 Elwour Branch 7	485	451	14	0	20	90	0	0	0	451	14	0	20	90	
35 Eodesy	144	52	24	0	6	62	0	0	0	52	24	0	6	62	
36 Elwatiya	1851	607	605	0	89	550	0	0	0	607	605	0	89	550	
37 Elalia	487	229	135	0	8	115	0	0	0	229	135	0	8	115	
38 Elwelljab	222	99	16	0	7	100	0	0	0	99	16	0	7	100	
39 Syalt Bdran	101	1	76	0	1	24	0	0	0	0	76	0	1	24	
40 Nile	623	201	81	0	241	100	0	0	0	201	81	0	241	100	
41 Ground Water	727	183	322	0	5	217	0	0	0	183	322	0	5	217	
42 Elklabia	94	20	63	0	10	1	0	0	0	20	63	0	10	1	
43 Elbadia	7	0	7	0	0	0	0	0	0	0	7	0	0	0	
Check Sums:	29311	15265	8219	0	1205	4628	0	0	0	15265	8219	0	1205	4628	
Check Sums:	29317	15265	8219	0	1205	4628	0	0	0	15265	8219	0	1205	4628	
Check Sums:	29317	15265	8219	0	1205	4628	0	0	0	15265	8219	0	1205	4628	

Check Sums:

Table 6-4. (Continued).

No	Name	Canal	Period	Current and Expected Cropping Pattern in Luxor Irrigation District (2001)																Water Requirements (m³/3dy)	Check Sums			
				Existing pattern				Expected pattern				0 - 2 wks				2 - 4 wks								
				Total	Sugar	Maize	Sesai	Gardl	Other	Vel	Cqd	Ri	Wheat	Fallow	Sugar	Maize	Sesai	Gardl	Other	Vd	CRI	Wheat		
1	Elmala	15/19	985	323	0	99	112	0	0	0	985	323	0	99	112	0	0	0	0	75057	69217	1519	1519	
2	Eislamia - South	104	13	40	0	25	26	0	0	0	0	13	5	0	25	26	0	0	0	0	4463	4024	104	104
3	Sahel Elshaba	95	5	0	19	0	0	0	0	0	71	5	0	19	0	0	0	0	0	4698	4415	95	95	
4	Sahel Elodisat	781	539	28	0	186	28	0	0	0	539	28	0	186	28	0	0	0	0	37625	35324	781	781	
5	Eislamia - North	14/18	531	700	0	23	164	0	0	0	531	700	0	23	164	0	0	0	0	68813	61848	1418	1418	
6	Canabit Elbotstan	425	159	220	0	8	38	0	0	0	159	220	0	8	38	0	0	0	0	20810	18769	425	425	
7	Elhosha	850	500	0	1	77	0	0	0	0	850	500	0	1	77	0	0	0	0	72418	66894	1428	1428	
8	Elhebal Main	1193	521	470	0	28	174	0	0	0	521	470	0	28	174	0	0	0	0	57326	51837	1193	1193	
9	Elhebal East	1212	547	555	0	26	84	0	0	0	547	555	0	26	84	0	0	0	0	59892	53984	1212	1212	
10	Gnabit Elhebel East	701	393	275	0	4	29	0	0	0	393	275	0	4	29	0	0	0	0	35322	32068	701	701	
11	Elalia New	1368	586	440	0	64	278	0	0	0	586	440	0	64	278	0	0	0	0	64388	59161	1368	1368	
12	Elawima	307	3	167	0	35	102	0	0	0	3	167	0	35	102	0	0	0	0	13020	11375	307	307	
13	Elqabia	496	160	204	0	28	104	0	0	0	160	204	0	28	104	0	0	0	0	23044	20844	496	496	
14	Metawe	296	160	0	0	0	0	0	0	0	160	0	0	7	129	0	0	0	0	12587	11388	296	296	
15	Ganabit Elhebel West	325	283	10	12	20	0	0	0	0	283	10	0	12	20	0	0	0	0	16479	15509	325	325	
16	Elsheikh Branch	524	365	111	0	0	48	0	0	0	365	111	0	0	48	0	0	0	0	26240	24251	524	524	
17	Elkarnak East	1940	976	564	0	31	369	0	0	0	976	564	0	31	369	0	0	0	0	92535	84773	1940	1940	
18	Ganabit Elkarnak East	1190	681	211	0	18	280	0	0	0	681	211	0	18	280	0	0	0	0	55921	51412	1190	1190	
19	Elroda	240	122	35	0	0	83	0	0	0	122	35	0	0	83	0	0	0	0	10852	10001	240	240	
20	Eloxour	3407	2324	725	0	22	336	0	0	0	2324	725	0	22	336	0	0	0	0	169694	156579	3407	3407	
21	Ganabit Elkarnak West	1393	912	240	0	4	237	0	0	0	912	240	0	4	237	0	0	0	0	67595	62399	1393	1393	
22	Ganabit Elkarnak (1)	153	105	25	0	1	22	0	0	0	105	25	0	1	22	0	0	0	0	7497	6926	153	153	
23	Ganabit Elkarnak (2)	623	380	155	0	2	86	0	0	0	380	155	0	2	86	0	0	0	0	30470	27922	623	623	
24	Ganabit Elkarnak (3)	119	78	20	0	0	21	0	0	0	78	20	0	0	21	0	0	0	0	5772	5326	119	119	
25	Eloxour Branch 1	80	111	0	0	62	0	0	0	80	111	0	0	62	0	0	0	0	11742	10582	253	253		
26	Eloxour Branch 2	368	280	54	0	0	34	0	0	0	280	54	0	0	34	0	0	0	0	18481	17154	368	368	
27	Eloxour Branch 3	249	206	37	0	1	5	0	0	0	206	37	0	1	5	0	0	0	0	12859	11973	249	249	
28	Sahel Ellesty	1172	517	245	0	152	258	0	0	0	517	245	0	152	258	0	0	0	0	53400	49002	1172	1172	
29	Eizena	242	23	105	0	30	84	0	0	0	23	105	0	30	84	0	0	0	0	10265	9120	242	242	
30	Eloxour Branch 4	260	187	20	0	53	0	0	0	187	20	0	0	53	0	0	0	0	12519	11638	260	260		
31	Eloxour Branch 5	322	255	35	0	32	0	0	0	255	35	0	0	32	0	0	0	0	16167	15061	322	322		
32	Eloxour Branch 6	123	118	0	0	5	0	0	0	0	118	0	0	0	5	0	0	0	0	6361	5997	123	123	
33	Eisalda	330	173	86	0	12	59	0	0	0	173	86	0	12	59	0	0	0	0	15779	14541	330	330	
34	Eloxour Branch 7	485	451	14	0	0	20	0	0	0	451	14	0	0	20	0	0	0	0	25044	23362	485	485	
35	Elodesy	144	52	24	0	6	62	0	0	0	52	24	0	6	62	0	0	0	0	6158	5630	144	144	
36	Elwatta	1851	607	605	0	89	550	0	0	0	607	605	0	89	550	0	0	0	0	82908	74733	1851	1851	
37	Elalia	487	229	135	0	8	115	0	0	0	229	135	0	8	115	0	0	0	0	22751	20761	487	487	
38	Ewelieab	222	99	16	0	7	100	0	0	0	99	16	0	7	100	0	0	0	0	9518	8808	222	222	
39	Syalt Beran	101	0	76	0	1	24	0	0	0	0	76	0	1	24	0	0	0	0	4599	4016	101	101	
40	Nile	623	201	81	0	24	1	100	0	0	0	201	81	0	24	1	0	0	0	26935	24865	623	623	
41	Ground Water	727	183	322	0	5	217	0	0	0	183	322	0	5	217	0	0	0	0	32745	29180	727	727	
42	Elklabia	94	20	63	0	10	1	0	0	0	20	63	0	10	1	0	0	0	0	4041	3474	94	94	
43	Elbiaida	7	0	7	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	347	283	7	7	
Check Sums:				29317	15265	8219	0	1205	4628	0	0	0	15265	8219	0	1205	4628	0	0	0	29317	28791	29317	29317

Table 6-4. (Continued).

Current and Expected Cropping Pattern in Luxor Irrigation District (2001)

Period	Canal	No.	Name	Area (Fed.)										Water Requirements (m^3/dy)						Check Sums						
				Total	Sugar	Maiza	Sesai	Gard	Other	VdC	Ri	Wheat	Fallow	Sugar	Maiza	Sesai	Gard	Other	VdC	Ri	Wheat	Fallow	0 - 2 wks	2 - 4 wks	Check Sums	
1	Elmala	1519	985	323	0	99	112	0	0	0	985	323	0	99	112	0	0	0	0	0	0	0	69217	58512	1519	
2	Elsiamia - South	104	13	50	0	25	26	0	0	0	0	13	40	0	25	26	0	0	0	0	0	0	4024	3111	104	
3	Sahel Elshaaib	95	71	5	0	19	0	0	0	0	0	71	5	0	19	0	0	0	0	0	0	0	4415	3946	95	
4	Sahel Elodisat	781	539	28	0	186	28	0	0	0	0	539	28	0	186	28	0	0	0	0	0	0	35324	31731	781	
5	Elsiamia - North	1418	531	700	0	23	164	0	0	0	0	531	700	0	23	164	0	0	0	0	0	0	61848	46660	1418	
6	Canabat Elbotstan	425	159	220	0	8	38	0	0	0	0	159	220	0	8	38	0	0	0	0	0	0	0	18769	14165	425
7	Elhosha	1428	850	500	0	1	77	0	0	0	0	850	500	0	1	77	0	0	0	0	0	0	0	66894	53972	1428
8	Elhebel Main	1193	521	470	0	28	174	0	0	0	0	521	470	0	28	174	0	0	0	0	0	0	0	40704	1193	1193
9	Elhebel East	1212	547	555	0	26	84	0	0	0	0	547	555	0	26	84	0	0	0	0	0	0	0	53984	41493	1212
10	Gnabit Elhebel East	701	393	275	0	4	29	0	0	0	0	393	275	0	4	29	0	0	0	0	0	0	0	32068	25395	701
11	Elalia New	1368	586	440	0	64	278	0	0	0	0	586	440	0	64	278	0	0	0	0	0	0	0	59161	47767	1368
12	Elawima	307	3	167	0	35	102	0	0	0	0	3	167	0	35	102	0	0	0	0	0	0	0	11375	8061	307
13	Elqabia	486	160	204	0	28	104	0	0	0	0	160	204	0	28	104	0	0	0	0	0	0	0	20844	16161	496
14	Metawe	296	0	160	0	0	0	0	0	0	0	160	0	0	7	129	0	0	0	0	0	0	0	11388	81643	296
15	Gnabit Elhebel West	325	283	10	0	12	20	0	0	0	0	283	10	0	12	20	0	0	0	0	0	0	0	15569	13963	325
16	Elshekh Branch	524	365	111	0	0	48	0	0	0	0	365	111	0	0	48	0	0	0	0	0	0	0	24251	20530	524
17	Elkarnak East	1940	976	564	0	31	369	0	0	0	0	976	564	0	31	369	0	0	0	0	0	0	0	84773	69360	1940
18	Ganabit Elkarnak East	1190	681	211	0	18	280	0	0	0	0	681	211	0	18	280	0	0	0	0	0	0	0	51412	43859	1190
19	Eiroda	1240	122	35	0	0	83	0	0	0	0	122	35	0	0	83	0	0	0	0	0	0	0	10001	8592	240
20	Eloxour	3407	2324	725	0	22	336	0	0	0	0	2324	725	0	22	336	0	0	0	0	0	0	0	156579	132418	3407
21	Ganabit Elkarnak West	1333	912	240	0	4	237	0	0	0	0	912	240	0	4	237	0	0	0	0	0	0	0	62399	53439	1393
22	Ganabit Elkarnak (1)	153	105	25	0	1	22	0	0	0	0	105	25	0	1	22	0	0	0	0	0	0	0	6926	5955	153
23	Ganabit Elkarnak (2)	623	380	155	0	2	86	0	0	0	0	380	155	0	2	86	0	0	0	0	0	0	0	27922	23256	623
24	Ganabit Elkarnak (3)	119	78	20	0	0	21	0	0	0	0	78	20	0	0	21	0	0	0	0	0	0	0	5326	4547	119
25	Eloxour Branch 1	253	80	111	0	0	62	0	0	0	0	80	111	0	0	62	0	0	0	0	0	0	0	10582	8103	253
26	Eloxour Branch 2	368	280	54	0	0	34	0	0	0	0	280	54	0	0	34	0	0	0	0	0	0	0	17154	14846	368
27	Eloxour Branch 3	249	206	37	0	1	5	0	0	0	0	206	37	0	1	5	0	0	0	0	0	0	0	1973	10368	249
28	Sahel Elieshy	1172	517	245	0	152	258	0	0	0	0	517	245	0	152	258	0	0	0	0	0	0	0	49002	41191	1172
29	Eizena	242	23	105	0	30	84	0	0	0	0	23	105	0	30	84	0	0	0	0	0	0	0	9120	6846	242
30	Eloxour Branch 4	260	187	20	0	0	53	0	0	0	0	187	20	0	0	53	0	0	0	0	0	0	0	11638	10308	260
31	Eloxour Branch 5	322	255	35	0	0	32	0	0	0	0	255	35	0	0	32	0	0	0	0	0	0	0	15061	13203	322
32	Eloxour Branch 6	123	118	0	0	0	5	0	0	0	0	118	0	0	0	5	0	0	0	0	0	0	0	5997	5452	123
33	Elsaida	330	173	86	0	12	59	0	0	0	0	173	86	0	12	59	0	0	0	0	0	0	0	14541	12022	330
34	Eloxour Branch 7	485	451	14	0	0	20	0	0	0	0	451	14	0	0	20	0	0	0	0	0	0	0	23562	21217	485
35	Elodesy	144	52	24	0	6	62	0	0	0	0	52	24	0	6	62	0	0	0	0	0	0	0	4791	444	144
36	Elwatta	1851	607	605	0	89	559	0	0	0	0	607	605	0	89	559	0	0	0	0	0	0	0	74733	59702	1851
37	Elalia	487	229	135	0	8	115	0	0	0	0	229	135	0	8	115	0	0	0	0	0	0	0	20761	17041	487
38	Eweljab	222	99	16	0	7	100	0	0	0	0	99	16	0	7	100	0	0	0	0	0	0	0	8808	7779	222
39	Syalt Baran	101	0	76	0	1	24	0	0	0	0	76	0	1	24	0	0	0	0	0	0	0	4016	2613	101	
40	Nile	623	201	81	0	241	100	0	0	0	0	201	81	0	241	100	0	0	0	0	0	0	0	24965	21600	623
41	Ground Water	727	183	322	0	5	217	0	0	0	0	183	322	0	5	217	0	0	0	0	0	0	0	29180	22130	727
42	Elkabia	94	20	63	0	10	1	0	0	0	0	20	63	0	10	1	0	0	0	0	0	0	0	4041	2823	94
43	Elbadiya	7	0	7	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	283	140	7
Check Sums:				29317	15265	8219	0	1205	4628	0	0	0	15265	8219	0	1205	4628	0	0	0	0	0	0	29317	105735	29317

Table 6-4. (Continued).

No	Name	Canal	Period	Area (Fed.)																		Water Requirements (m³/dy)						Check Sums			
No	Name	Canal	Period	Existing pattern																		Expected pattern						Check Sums			
				Total	Sugar	Maize	Sesai	Gard	Other	Ve	Cq	Ri	Wheat	Fallow	Sugar	Maize	Sesai	Gard	Other	Ve	Cq	Ri	Wheat	Fallow	0 - 2 wks	2 - 4 wks	Existing	Expected			
1	Elmala		15/19	985	323	0	99	112	0	0	0	0	985	323	0	99	112	0	0	0	0	0	0	0	58512	50168	1519	1519			
2	Eislamia - South		104	131	40	0	25	26	0	0	0	0	13	40	0	25	26	0	0	0	0	0	0	0	3111	2481	104	104			
3	Sahel Elshaab		95	5	0	19	0	0	0	0	0	0	71	5	0	19	0	0	0	0	0	0	0	0	3946	3500	95	95			
4	Sahel Elodisat		781	539	28	0	186	28	0	0	0	0	539	28	0	186	28	0	0	0	0	0	0	0	31731	28362	781	781			
5	Eislamia - North		1418	531	700	0	23	164	0	0	0	0	531	700	0	23	164	0	0	0	0	0	0	0	46660	36174	1418	1418			
6	Canabit Elbotstan		425	159	220	0	8	38	0	0	0	0	159	220	0	8	38	0	0	0	0	0	0	0	14165	10725	425	425			
7	Elhosha		1428	850	500	0	1	77	0	0	0	0	850	500	0	1	77	0	0	0	0	0	0	0	53972	43425	1428	1428			
8	Elhebal Main		1193	521	470	0	28	174	0	0	0	0	521	470	0	28	174	0	0	0	0	0	0	0	40704	32951	1193	1193			
9	Elhebal East		1212	547	555	0	26	84	0	0	0	0	547	555	0	26	84	0	0	0	0	0	0	0	41493	32832	1212	1212			
10	Gnabit Elhebel East		701	393	275	0	4	29	0	0	0	0	393	275	0	4	29	0	0	0	0	0	0	0	25395	20625	701	701			
11	Elalia New		1368	586	440	0	64	278	0	0	0	0	586	440	0	64	278	0	0	0	0	0	0	0	47767	38875	1368	1368			
12	Elawima		307	3	167	0	35	102	0	0	0	0	3	167	0	35	102	0	0	0	0	0	0	0	8061	6091	307	307			
13	Elgabia		496	160	204	0	28	104	0	0	0	0	160	204	0	28	104	0	0	0	0	0	0	0	16161	12814	496	496			
14	Metawe		296	0	160	0	129	0	0	0	0	0	160	0	0	160	0	0	0	0	0	0	0	0	41493	32832	1212	1212			
15	Gnabit Elhebel West		325	283	10	0	12	20	0	0	0	0	283	10	0	12	20	0	0	0	0	0	0	0	25395	20625	701	701			
16	Elsheikh Brancach		524	365	111	0	0	48	0	0	0	0	365	111	0	0	48	0	0	0	0	0	0	0	20530	17565	524	524			
17	Elkamak East		1940	976	564	0	31	369	0	0	0	0	976	564	0	31	369	0	0	0	0	0	0	0	69360	57773	1940	1940			
18	Gnabit Elkamak East		1190	681	211	0	18	280	0	0	0	0	681	211	0	18	280	0	0	0	0	0	0	0	43859	38226	1190	1190			
19	Elroda		240	122	35	0	83	0	0	0	0	0	122	35	0	83	0	0	0	0	0	0	0	0	8592	7555	240	240			
20	Eloxour		3407	2324	725	0	22	336	0	0	0	0	2324	725	0	22	336	0	0	0	0	0	0	0	132418	113514	3407	3407			
21	Gnabit Elkamak West		1393	912	240	0	4	237	0	0	0	0	912	240	0	4	237	0	0	0	0	0	0	0	53439	46479	1393	1393			
22	Gnabit Elkamak (1)		153	105	25	0	1	22	0	0	0	0	105	25	0	1	22	0	0	0	0	0	0	0	5955	5195	153	153			
23	Gnabit Elkamak (2)		623	380	155	0	2	86	0	0	0	0	380	155	0	2	86	0	0	0	0	0	0	0	23256	19820	623	623			
24	Gnabit Elkamak (3)		119	78	20	0	0	21	0	0	0	0	78	20	0	0	21	0	0	0	0	0	0	0	4547	3977	119	119			
25	Eloxour Branch 1		233	80	111	0	0	62	0	0	0	0	80	111	0	0	62	0	0	0	0	0	0	0	8103	6381	253	253			
26	Eloxour Branch 2		368	280	54	0	0	34	0	0	0	0	280	54	0	0	34	0	0	0	0	0	0	0	14846	12966	368	368			
27	Eloxour Branch 3		249	206	37	0	1	5	0	0	0	0	206	37	0	1	5	0	0	0	0	0	0	0	10368	9018	249	249			
28	Sahel Elesty		1172	517	245	0	162	258	0	0	0	0	517	245	0	152	258	0	0	0	0	0	0	0	41191	35405	1172	1172			
29	Eizena		242	23	105	0	30	84	0	0	0	0	23	105	0	30	84	0	0	0	0	0	0	0	6846	5426	242	242			
30	Eloxour Branch 4		260	187	20	0	53	0	0	0	0	0	187	20	0	0	53	0	0	0	0	0	0	0	10308	9210	260	260			
31	Eloxour Branch 5		322	255	35	0	32	0	0	0	0	0	255	35	0	0	32	0	0	0	0	0	0	0	13203	11637	322	322			
32	Eloxour Branch 6		123	118	0	0	5	0	0	0	0	0	118	0	0	0	5	0	0	0	0	0	0	0	5452	4907	123	123			
33	Eisalda		330	173	86	0	12	59	0	0	0	0	173	86	0	12	59	0	0	0	0	0	0	0	12022	10071	330	330			
34	Eloxour Branch 7		485	451	14	0	0	20	0	0	0	0	451	14	0	0	20	0	0	0	0	0	0	0	21217	18973	485	485			
35	Elodesy		144	52	24	0	6	62	0	0	0	0	52	24	0	6	62	0	0	0	0	0	0	0	4791	4204	144	144			
36	Elwitia		1851	607	605	0	89	550	0	0	0	0	607	605	0	89	550	0	0	0	0	0	0	0	59702	49727	1851	1851			
37	Elalia		487	229	135	0	8	115	0	0	0	0	229	135	0	8	115	0	0	0	0	0	0	0	17041	14341	487	487			
38	Elweliah		222	99	16	0	7	100	0	0	0	0	99	16	0	7	100	0	0	0	0	0	0	0	7779	6987	222	222			
39	Syalt Bdran		101	0	76	0	1	24	0	0	0	0	0	76	0	1	24	0	0	0	0	0	0	0	2613	18862	101	101			
40	Nile		623	201	81	0	241	100	0	0	0	0	201	81	0	241	100	0	0	0	0	0	0	0	21600	18862	623	623			
41	Ground Water		727	183	322	0	5	217	0	0	0	0	183	322	0	5	217	0	0	0	0	0	0	0	22130	17620	727	727			
42	Elkabia		94	20	63	0	10	1	0	0	0	0	20	63	0	10	1	0	0	0	0	0	0	0	2823	2009	94	94			
43	Elbiaida		7	0	7	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	140	98	7	7			
Check Sums:			29317	15265	8219	0	1205	4628	0	0	0	0	0	15265	8219	0	1205	4628	0	0	0	0	0	0	0	1057935	886895	29317	29317		
Check Sums:																															

Table 6-5. Crop water needs compared with water delivered to the Luxor District expressed as daily average over each half-month period from March 2000 through September 2001 (See Sheet 1 of file “DEMO – Luxor” on disk).

Per	From	To	Yr	Mo	Water Required		Water Delivered		Area fed		Existing		Expected		Cropped feedards		Fallow feedards		Dates		Water Delivered to Area m ³ /day feedard)				
					Existing	Expected	(million cubic meters/day)	% Diff. From Existing Need	% Diff. From Expected Need	fed	fed	fed	fed	fed	fed	fed	fed	fed	fed	fed	fed	fed	fed	fed	
5	1 Mar	15 Mar	0	M	1.0373		29317															5	1 Mar	15 Mar	0
6	16 Mar	31 Mar	0		1.1157																	6	16 Mar	31 Mar	0
7	1 Apr	15 Apr	0	A	1.0643																	7	1 Apr	15 Apr	0
8	16 Apr	30 Apr	0		0.9986																	8	16 Apr	30 Apr	0
9	1 May	15 May	0	M	1.1478																	9	1 May	15 May	0
10	16 May	31 May	0		0.9347																	10	16 May	31 May	0
11	1 Jun	15 Jun	J	J	1.1391	21.87																11	1 Jun	15 Jun	44.59
12	16 Jun	30 Jun	0	J	1.2418	1.1900	-10.96	-4.18	0	29317	1760	27557	11	1 Jun	15 Jun	45.58	45.06	40.59	43.18						
13	1 Jul	15 Jul	0	J	1.4274	1.4274	0.0644	-25.43	0	29317	0	29317	12	16 Jun	30 Jun	0	48.69	48.89	36.31	36.31					
14	16 Jul	31 Jul	0	J	1.4312	1.4312	0.0508	-26.58	0	29317	0	29317	13	1 Jul	15 Jul	0	48.82	48.82	35.84	35.84					
15	1 Aug	15 Aug	0	A	1.4419	1.4419	1.2810	-11.15	0	29317	0	29317	14	16 Jul	31 Jul	0	49.18	49.18	43.70	43.70					
16	16 Aug	31 Aug	0	A	1.4195	1.4195	1.3228	-6.81	0	29317	0	29317	15	1 Aug	15 Aug	0	48.42	48.42	45.12	45.12					
17	1 Sep	15 Sep	S	S	1.0381	1.0314	1.3114	26.33	27.15	0	29317	0	29317	17	1 Sep	15 Sep	0	35.41	35.41	44.73	44.73				
18	16 Sep	30 Sep	O	O	0.9508	0.9508	1.2187	28.17	28.17	0	29317	0	29317	18	16 Sep	30 Sep	0	32.43	32.43	41.57	41.57				
19	1 Oct	15 Oct	O	O	0.7490	0.8698	0.9362	24.99	7.63	7525	21792	0	29317	19	1 Oct	15 Oct	0	34.37	34.37	29.67	31.93				
20	16 Oct	31 Oct	O	O	0.7067	0.6484	0.9368	32.42	44.32	5175	24142	9327	19990	20	16 Oct	31 Oct	0	29.27	29.27	32.44	38.76				
21	1 Nov	15 Nov	N	N	0.6187	0.6495	1.0522	70.08	62.02	5175	24142	5175	21412	21	1 Nov	15 Nov	0	25.63	25.63	26.90	43.59				
22	16 Nov	30 Nov	O	O	0.5275	0.5873	0.9257	75.50	57.63	1909	27408	3143	26174	22	16 Nov	30 Nov	0	19.24	19.24	22.44	33.77				
23	1 Dec	15 Dec	O	D	0.4287	0.4548	0.8418	96.36	85.09	2238	27079	2914	26403	23	1 Dec	15 Dec	0	15.83	15.83	17.23	31.09				
24	16 Dec	31 Dec	O	N	0.3489	0.3632	0.5097	46.08	40.35	4583	24734	4583	24734	24	16 Dec	31 Dec	0	14.11	14.11	14.68	20.61				
1	1 Jan	15 Jan	J	J	0.3578	0.3578	0.5445	52.16	52.16	6108	23209	6108	23209	1	1 Jan	15 Jan	0	15.42	15.42	15.42	23.46				
2	16 Jan	31 Jan	O	O	0.3711	0.3810	1.0752	189.73	182.22	7868	21449	7625	21692	2	16 Jan	31 Jan	0	17.30	17.30	17.56	50.13				
3	1 Feb	15 Feb	O	F	0.4055	0.4001	0.9771	140.97	144.20	9142	20175	9142	20175	3	1 Feb	15 Feb	0	20.10	20.10	19.83	48.43				
4	16 Feb	28 Feb	O	N	0.4679	0.4517	0.9598	105.14	112.48	9142	20175	9142	20175	4	16 Feb	28 Feb	0	23.19	23.19	22.39	47.57				
5	1 Mar	15 Mar	M	M	0.6174	0.5920	0.8343	35.12	40.92	7620	21675	7675	21642	5	1 Mar	15 Mar	0	28.46	28.46	27.36	38.55				
6	16 Mar	31 Mar	M	M	0.7598	0.7719	1.0142	33.48	40.89	6111	23206	6111	23206	6	16 Mar	31 Mar	0	32.74	32.74	31.02	43.70				
7	1 Apr	15 Apr	A	A	0.7908	0.7669	1.0510	32.91	37.05	5534	23783	4728	24589	7	1 Apr	15 Apr	0	33.25	33.25	31.19	44.19				
8	16 Apr	30 Apr	A	A	0.6864	0.6311	0.8564	24.76	35.70	13292	16025	13292	16025	8	16 Apr	30 Apr	0	42.83	42.83	39.38	53.44				
9	1 May	15 May	M	M	0.7860	0.7753	1.0644	35.41	37.28	11980	17337	11980	17337	9	1 May	15 May	0	45.34	45.34	44.72	61.39				
10	16 May	31 May	A	A	0.9166	0.9171	1.4228	55.23	55.13	9385	19932	9385	19932	10	16 May	31 May	0	45.99	45.99	46.01	71.38				
11	1 Jun	15 Jun	J	J	1.3487	1.3391	0.9328	-30.84	-30.34	0	29317	0	29317	11	1 Jun	15 Jun	0	46.01	46.01	45.67	31.82				
12	16 Jun	30 Jun	O	O	1.2591	1.2591	1.0664	-15.30	-15.30	0	29317	0	29317	12	16 Jun	30 Jun	0	42.95	42.95	42.95	36.38				
13	1 Jul	15 Jul	O	O	1.2859	1.2859	1.1895	-7.49	-7.49	0	29317	0	29317	13	1 Jul	15 Jul	0	43.86	43.86	40.57	40.57				
14	16 Jul	31 Jul	Z	Z	1.3838	1.3838	1.3314	-3.78	-3.78	0	29317	0	29317	14	16 Jul	31 Jul	0	47.20	47.20	45.41	45.41				
15	1 Aug	15 Aug	A	A	1.4135	1.4135	1.5543	9.96	9.96	0	29317	0	29317	15	1 Aug	15 Aug	0	48.22	48.22	53.02	53.02				
16	16 Aug	31 Aug	A	A	1.4056	1.4056	1.3220	-5.95	-5.95	0	29317	0	29317	16	16 Aug	31 Aug	0	47.95	47.95	45.09	45.09				
17	1 Sep	15 Sep	S	S	1.2873	1.2873	1.5726	22.16	22.16	0	29317	0	29317	17	1 Sep	15 Sep	0	43.91	43.91	53.64	53.64				
18	16 Sep	30 Sep	S	S	1.0579	1.0579	1.3773	30.19	30.19	0	29317	0	29317	18	16 Sep	30 Sep	0	36.09	36.09	46.98	46.98				
19	1 Oct	15 Oct	O	O	0.8869	0.8869				0	29317	0	29317	19	1 Oct	15 Oct	0	30.25	30.25						

The data values for area in fallow for the existing and expected time periods follow in a similar fashion. For example, for period 10, 2000, Table 6-4, the existing area of fallow totals 3773 feddans for the district. This value is entered into Table 6-5 for the time period, 16 May – 31 May. The expected area of fallow (period 10, 2000, Table 6-4) is 1760 feddans. This is the area expected to be in fallow during the next half-month time period, and thus the value 1760 feddans is entered into Table 6-5 as expected fallow for 1 Jun – 15 Jun, 2000.

Table 6-6 shows daily water delivered to the pilot district and daily average over each half-month period expressed as million m³. This table is summarized from results of the water-monitoring program presented in Chapter 9. This table (Table 6-6) forms the far right part of Sheet 1 of Luxor DEMO spreadsheet. Proper daily values from the results of the water-monitoring program (Chapter 9) must be entered into this area of Luxor DEMO.

In summary, Luxor DEMO requires five types of data to be entered for each half-month: (1) crop water needs (million m³/day) for existing crops, (2) crop water needs (million m³/day) for expected crops, (3) existing area (feddans) of fallow, (4) expected area (feddans) of fallow, and daily values of water delivered (million m³) to the district.

Figures 6-1 and 6-2 show the water delivered to the district compared to the calculated water needs – average daily values for the half-month time period expressed in million m³/day. The curve labeled “existing” need shows the water needed by the existing or current crops for the particular half month. The “expected” need for the particular half month is the water needed by the crops calculated from cropping patterns that were forecast from the previous half-month.

Figures 6-3 and 6-4 give the same information expressed on a per feddan (of cropped area) basis. Since the existing and expected areas of crops do not agree exactly, two curves of water delivery are calculated. The first labeled “Delivered/(Existing Area)” is the water delivered in m³/day per feddan of existing crops. The second labeled “Delivered/(Expected Area)” is the water delivered in m³/day per feddan of crops forecast during the previous half-month as expected for the given half-month.

Another pair of figures (Figures 6-5 and 6-6) plot the percent difference of water delivered from existing need and from expected need (See Report 45, section 3.5.2 for equations). Positive values of percent difference mean over-delivery and negative values designate under-delivery.

Figure 6-7 combines the information of Figures 6-1 and 6-2 for the entire time data was collected, *i.e.*, from March 2000 through September 2001. Likewise, Figures 6-8 and 6-9 combine Figures 6-3 and 6-4, and 6-5 and 6-6, respectively.

Table 6-6. Daily water delivered to the Luxor District and daily average over each half-month period from March 2000 through September 2001 expressed as million m³ (See Sheet 1 of file “DEMO – Luxor” on disk).

Day	2000						2001					
	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb
1	0.6667	1.347	1.016	1.173	0.684	1.222	1.494	1.134	1.085	0.675	0.421	0.954
2	0.830	0.723	1.211	1.260	1.085	1.204	1.389	1.025	1.048	0.779	0.421	1.124
3	0.837	1.129	1.196	1.298	1.146	1.223	1.532	1.048	1.100	0.602	0.499	0.831
4	0.822	1.317	0.942	1.360	0.826	1.288	1.416	0.930	1.081	0.877	0.648	0.930
5	0.853	0.932	0.851	1.162	0.763	1.193	1.251	0.972	1.270	1.304	0.648	1.099
6	1.011	0.917	1.048	1.245	0.771	1.168	1.420	1.007	0.934	1.198	0.584	1.085
7	1.196	1.121	1.162	1.060	0.996	1.180	1.135	1.020	0.850	1.051	0.461	0.992
8	1.489	0.833	1.606	1.088	1.080	1.460	1.042	1.048	0.781	0.829	0.528	0.910
9	1.424	1.043	1.470	1.135	1.017	1.454	1.194	0.860	0.862	0.960	0.538	0.849
10	1.332	1.103	1.228	1.135	1.428	1.308	1.162	0.822	0.862	0.972	0.422	0.930
11	1.219	1.088	1.223	1.282	1.346	1.389	1.354	0.799	0.872	0.953	0.370	0.911
12	0.878	1.107	1.223	1.103	1.083	1.483	1.409	0.801	1.133	0.737	0.638	1.286
13	0.981	1.090	0.801	1.227	1.215	1.387	1.332	0.846	1.556	0.712	0.701	0.880
14	0.939	1.036	0.965	1.141	1.142	1.447	1.264	0.821	1.224	0.703	0.227	0.745
15	1.080	1.179	1.274	1.181	1.180	1.437	1.278	0.910	1.125	0.275	1.062	1.032
Average	1.0373	1.0643	1.1478	1.1900	1.0508	1.3228	1.3114	0.9362	1.0522	0.8418	0.5445	0.9771
16	0.788	1.030	1.112	1.100	1.098	1.461	1.117	1.173	0.971	0.126	1.202	1.145
17	1.057	1.041	0.947	1.005	1.278	1.338	1.255	0.749	0.969	0.126	1.036	1.179
18	0.815	1.148	0.982	1.209	1.358	1.383	1.453	0.719	0.890	0.253	1.071	1.272
19	0.861	1.135	1.326	1.000	1.372	1.422	1.423	0.839	1.102	0.518	0.824	0.982
20	0.846	0.966	1.188	1.030	1.512	1.370	1.373	0.940	0.774	0.378	0.994	0.896
21	1.282	1.071	1.211	1.123	1.253	1.552	1.288	0.828	0.704	0.378	1.068	0.949
22	1.061	0.650	1.386	1.084	1.261	1.429	1.192	0.908	1.052	1.249	1.265	0.673
23	1.249	0.891	1.318	1.040	1.227	1.408	1.182	0.992	0.945	1.140	1.246	0.901
24	1.146	0.891	1.036	1.067	1.176	1.423	1.397	0.890	0.892	1.140	1.024	0.972
25	1.349	1.099	1.056	1.178	1.278	1.579	1.227	0.920	0.773	0.353	0.918	0.791
26	1.206	1.047	1.054	1.418	1.327	1.602	1.227	1.069	1.032	0.228	0.970	0.791
27	1.231	0.886	0.999	0.941	1.460	1.561	1.105	0.864	0.930	0.196	1.165	0.942
28	1.338	0.919	1.075	0.968	1.129	1.592	1.076	0.969	0.893	0.281	1.084	0.972
29	1.441	1.075	1.315	0.898	1.257	1.523	0.976	0.890	0.971	0.421	1.131	0.926
30	0.929	1.176	1.147	0.964	1.270	1.501	1.060	1.179	0.766	0.727	1.123	0.972
31	1.417	1.146	1.146	1.214	1.514	1.132	1.132	1.051	0.727	0.941	1.471	1.471
Average	1.1261	1.006	1.1436	1.006	1.2793	1.4786	1.2233	0.9286	0.9109	0.5009	1.0748	0.9589
											1.0092	1.0355
											1.4352	1.4352
											1.0581	1.0581
											1.3735	1.3735
											1.3214	1.3214
											1.381	1.381

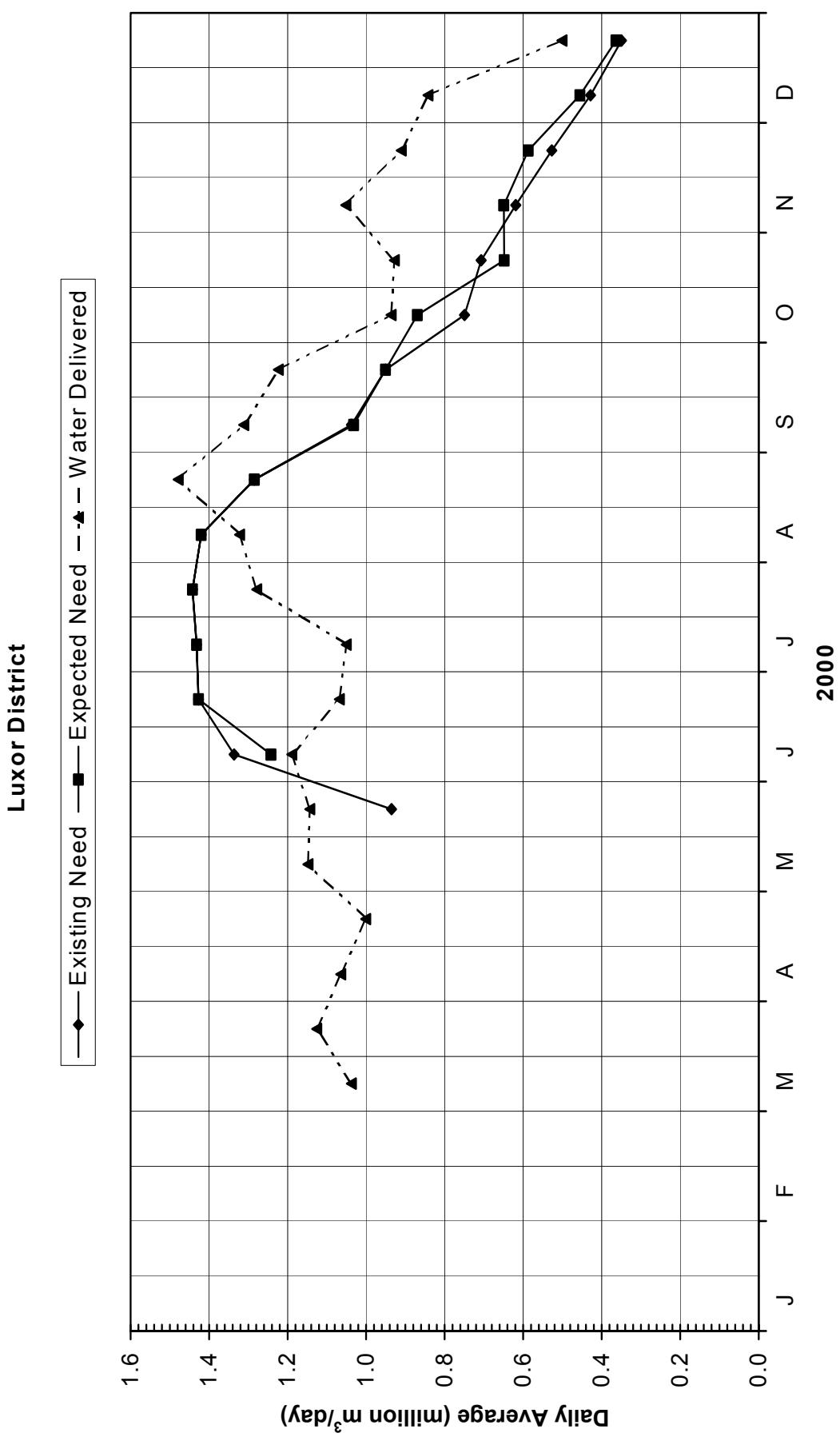


Figure 6-1. Daily crop water needs and water delivered to the Luxor District averaged over each half-month period and expressed as million m^3/day in 2000 (See Chart 1 of file “DEMO – Luxor” on disk).

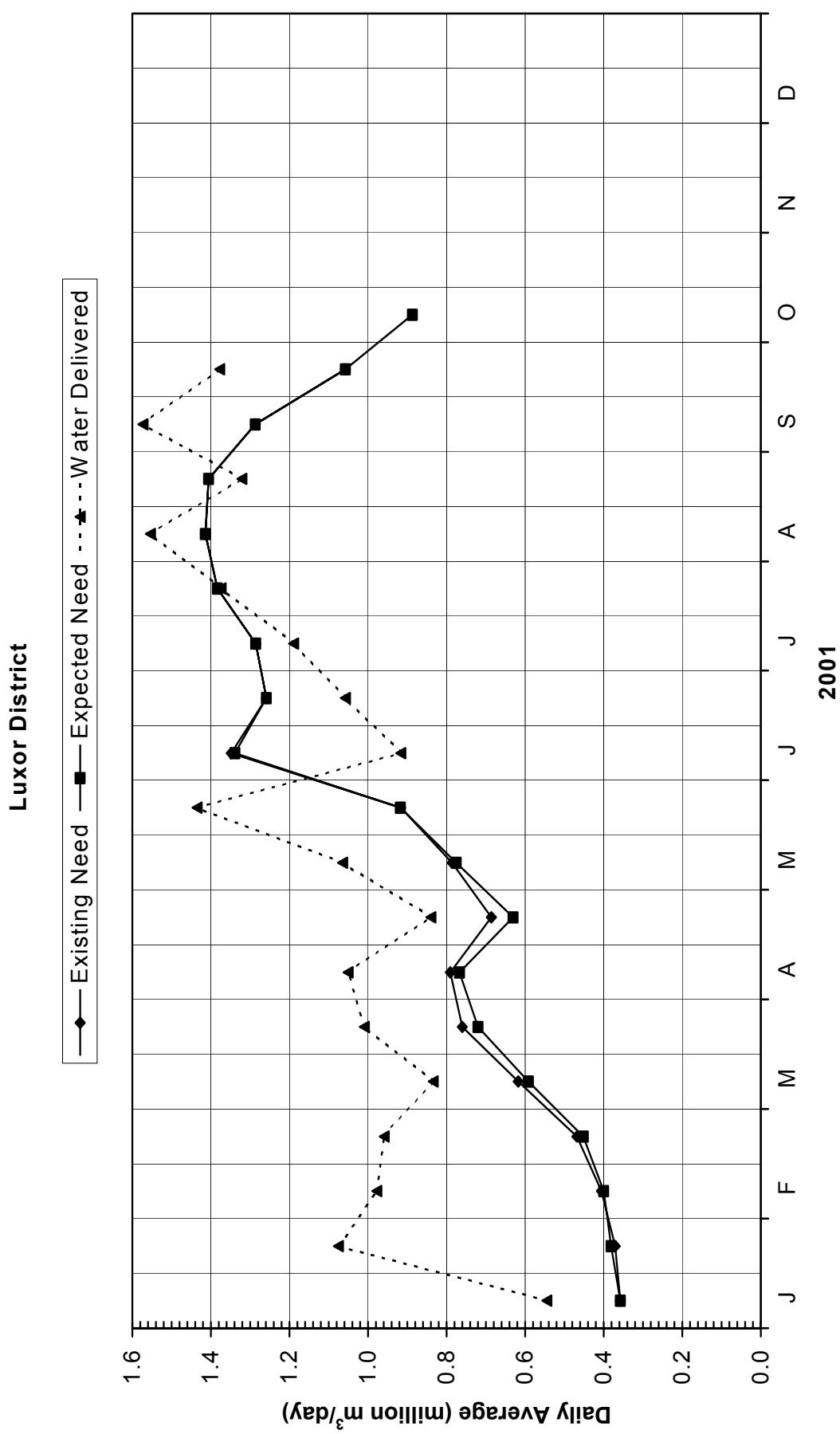


Figure 6-2. Daily crop water needs and water delivered to the Luxor District averaged over each half-month period and expressed as million m³/day in 2001 (See Chart 2 of file “DEMO – Luxor” on disk).

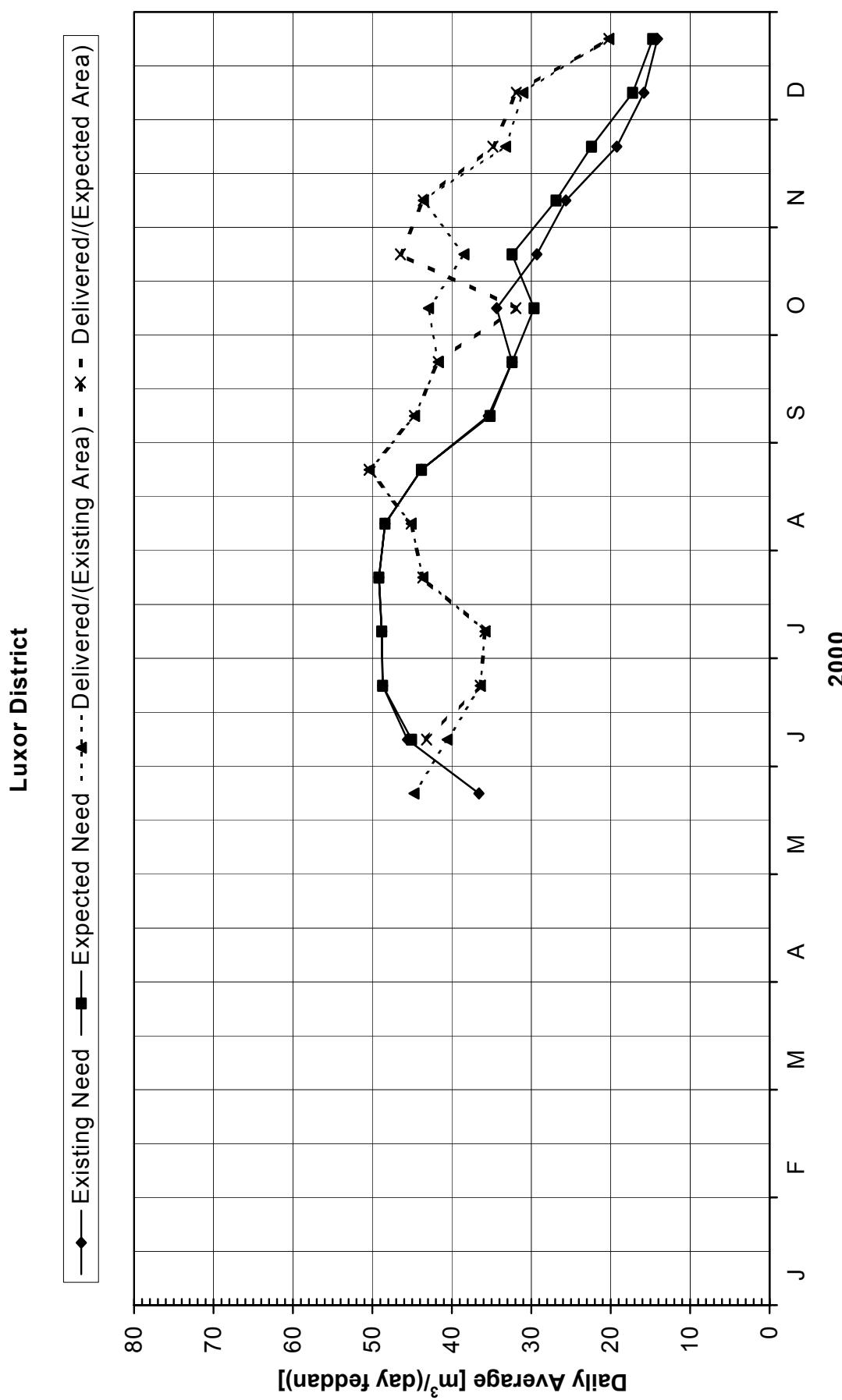


Figure 6-3. Daily crop water needs and water delivered to the Luxor District averaged over each half-month period and expressed as $m^3/\text{day per feddan}$ in 2000 (See Chart 11 of file "DEMO - Luxor" on disk).

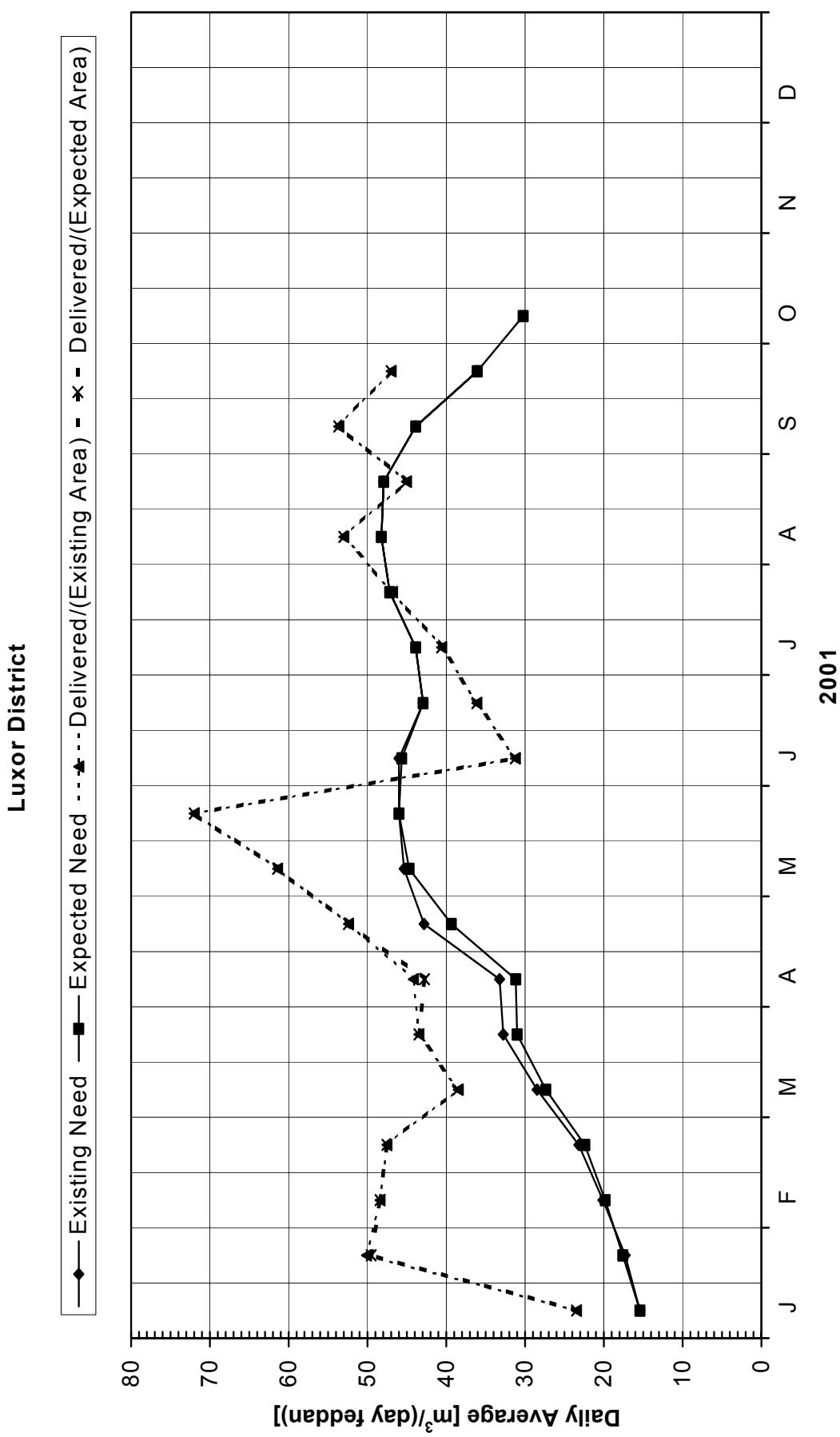


Figure 6-4. Daily crop water needs and water delivered to the Luxor District averaged over each half-month period and expressed as $\text{m}^3/\text{day per feddan}$ in 2001 (See Chart 12 of file "DEMO - Luxor" on disk).

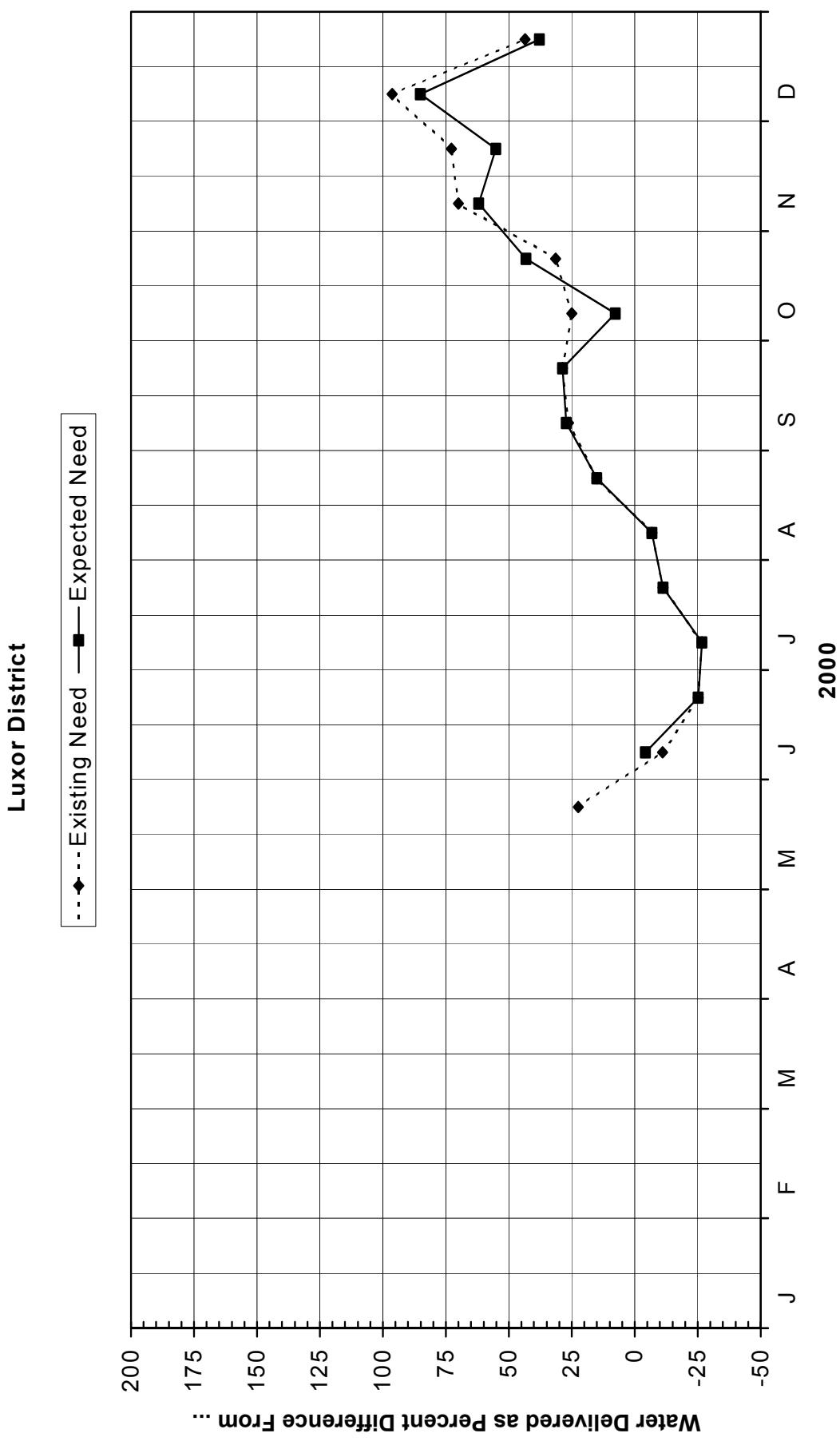


Figure 6-5. Percent difference of daily water delivered from crop water needs of existing crops and expected crops in the Luxor District averaged over each half-month period in 2000 (See Chart 21 of file "DEMO – Luxor" on disk).

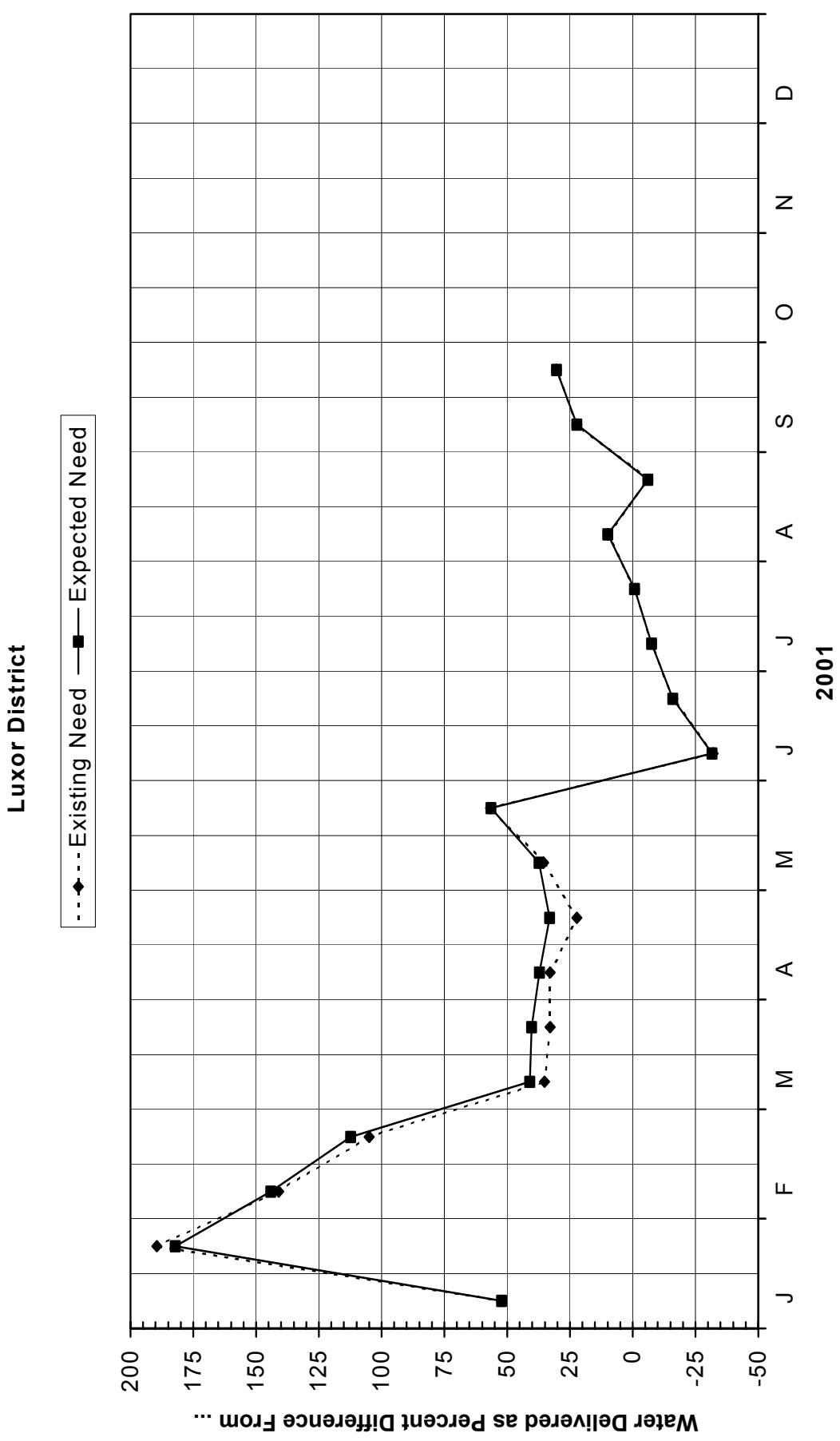


Figure 6-6. Percent difference of daily water delivered from crop water needs of existing crops and expected crops in the Luxor District averaged over each half-month period in 2001 (See Chart 22 of file “DEMO – Luxor” on disk).

Luxor District

—♦— Existing Need —■— Expected Need ···▲··· Water Delivered

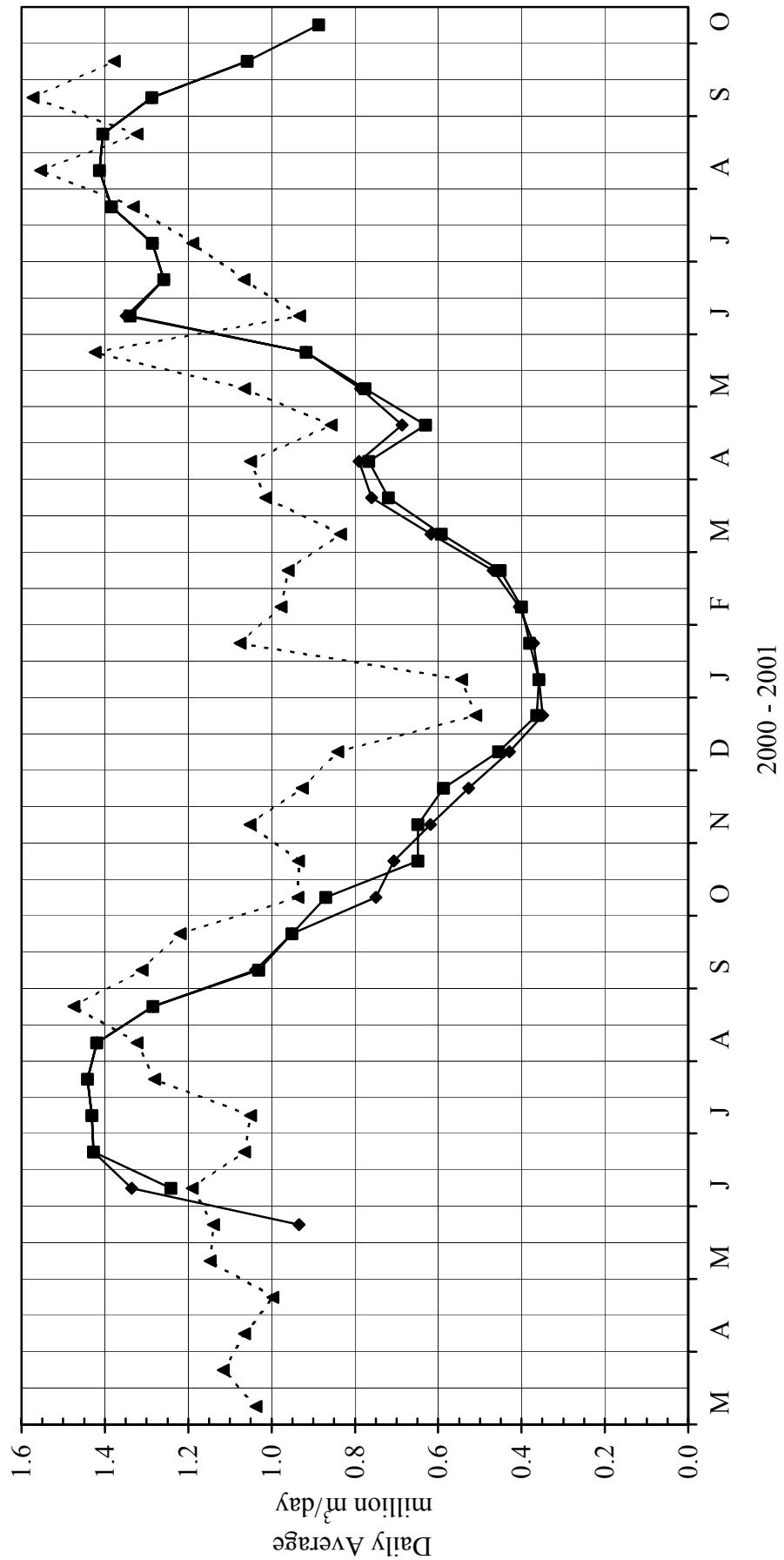


Figure 6-7. Daily crop water needs and water delivered to the Luxor District averaged over each half-month period and expressed as million m^3 /day from March 1, 2000 through October 15, 2001.

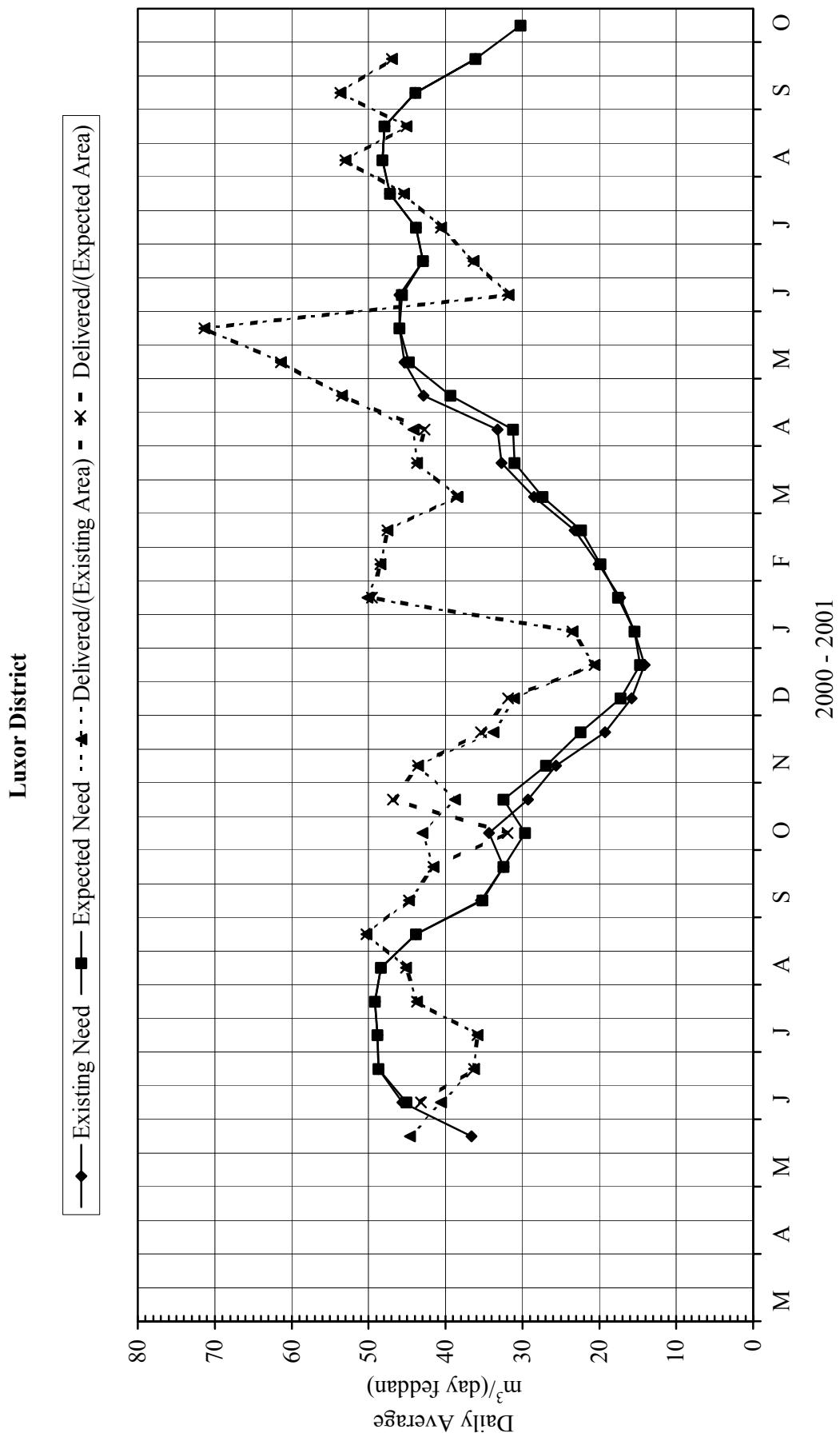


Figure 6-8. Daily crop water needs and water delivered to the Luxor District averaged over each half-month period and expressed as m^3/day per feddan of crop area from March 1, 2000 through October 15, 2001.

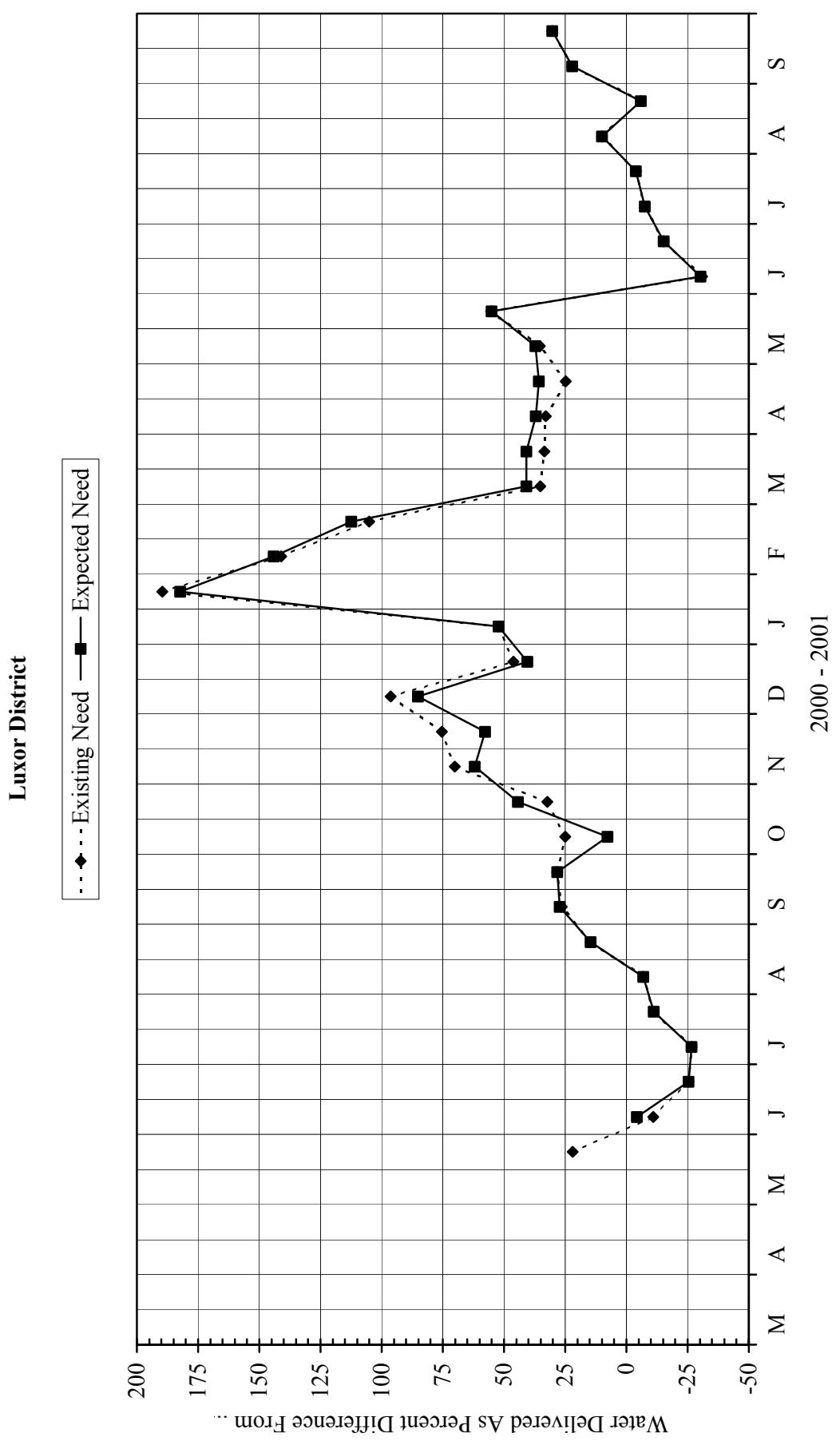


Figure 6-9. Percent difference of daily water delivered from crop water needs of existing crops and expected crops in the Luxor District averaged over each half-month period from March 2000 through September 2001.

7 Crop Water Needs Microsoft Access User's Manual

7.1 Introduction

This chapter presents a user's manual for the Microsoft Access tool for estimating actual (current or existing) and expected crop water needs at the district level. This is Version II of the Microsoft Excel tool described in Chapters 4, 5, and 6, and uses the same fundamental equations and approach to calculation of crop water needs. On a semi-monthly basis, the Ministry of Agriculture and Land Reclamation (**MALR**) has developed an Access tool for aggregating crop areas from the hood up to the canal level within the agricultural administrative unit or units within the irrigation district. The output of this tool is communicated to the irrigation district of the Ministry of Water Resources and Irrigation (**MWRI**). The district then calculates the canal water needs based on the submitted cropping pattern and, in turn, submits these needs to the general irrigation directorate, which again communicates water needs reports to upper levels of water distribution of **MWRI**. Activities required by **MWRI** includes entering semi-monthly cropping pattern data, calculating water needs for canals serving the districts, generating reports/graphical data presentations, and finally sending these reports to the general directorates via e-mail.

The objective of developing the Access tool is to provide **MWRI** district engineers with an automated, user friendly, and practical tool for implementing the national MISD policy in their districts.

Chapters 4, 5, and 6 of this report present the Crop Water Needs model and user's manual for the Excel version. In this chapter, the user's manual for the Access version is presented. Chapter 8 is devoted to presentation of examples of results and calculations from the Access version. It is not intended in these two chapters to present the technical model for calculating water needs, however, the user is advised to refer to the Excel version guide whenever it is required to understand the model's specific theory and relevant equations (See also APRP Water Policy Program Report 45, December 2001).

7.2 Background

The water needs tool is developed using the Microsoft Access database programming language. This is one of the Microsoft Office programs used in developing integrated, relational databases. The Access tool is developed under Arabic Windows 2000 and utilizing Microsoft Office 2000. The Access development tool uses Visual Basic coding language and SQL database query language. The main feature of Access is that it is a visual programming language, a language fully compatible with the Microsoft Windows environment. This feature provides a powerful tool for the programmer whose intention is to tailor a flexible user interface for a specific model.

All objects (main screens/forms, menus/sub-menus, text and graphical reports) developed for the water needs model are designed to display in the English language. However, in further developments of this tool, those objects can easily be translated to display in Arabic. It is to be noted that, since this version is developed under the Arabic Windows environment, there is no problem in using Arabic numerals of the operating system. In this case report headings, Access objects will still appear in English, while numbers will display and print in Arabic.

7.3 Software Requirements and Installation

7.3.1 Software Requirements

The program is developed using Microsoft Access 2000, therefore it should be installed under Arabic Windows 98/2000/NT operating system and Microsoft Office 2000. It is recommended that Microsoft Outlook be installed on the computer running this tool. The program can be installed on any PC configuration that runs both Microsoft Windows and Office 2000 without memory problems.

Applications developed with Access have the extension “.mdb” in the development phase. Until the beta version of this tool is verified, the program should be run with Microsoft Access installed on the district’s computer. When this version is completely tested it can be transformed to “.mde” file where the user, or even the system manager, can not change the design of the interface and data base objects. The crop water needs tool can then be transformed to a “.exe” file which runs independent of Microsoft Access.

The program is distributed on 1 floppy disk (**Disk 2 attached to this report**) that contains the following files:

- 1- MISD_Tool.zip, a compressed file of the water need Access application.
- 2- Winzip32.exe file, this is the program that will be used to extracts the .mdb file.

7.3.2 Installation

To install the program, the user should follow the following procedure:

1. Copy all files to the application folder on the MISD computers of the irrigation districts. In order to have a standard file structure for MISD computers, it is advised that the folder should be created under a main directory named MISD and be given the name application. All files therefore, will be located in the directory named “\MISD\application”.
2. Click on winzip.exe icon to run the unzip program and ask it to extract the water needs program from the MISD-Tool .zip file and put it on the folder named MISD\ application.
3. Once the MISD-Tool.zip file is decompressed an icon having the name “MISD-Tool.mdb” will display in the same folder. This is the water needs access tool which shall be used later to analyze MISD data. MISD-tool.mdb contains database tables, water requirement model and reports required to accomplish all MISD activities.
4. Install Microsoft Outlook on the computer running this tool.
5. Configure/add the district’s e-mail account on Microsoft Outlook.

7.4 District Configuration

7.4.1 Data Types

There are two types of data relevant to this tool. First, “static data” describe and configure the district’s specific system. Static data define the district canal system and include an exhaustive list of the crops to be cultivated in the district throughout the year together with the other crop related definitions. Weather data are also considered as static data since they

should be updated every few years whenever an update of the average monthly (or semi-monthly) rainfall in the district is available.

The second data type is the so called “dynamic data”, these include historic current/expected cropping pattern data entered through the user interface to the data base, the current /expected water needs data calculated based on both current and expected historic crop pattern data, respectively. Here, the semi-monthly crop pattern data of all district canals are considered as dynamic data. These are the semi-monthly data submitted by the **MALR** administrative unit to district engineers twice each month.

7.4.2 Operation Modes

There are two modes for running this application, the first is the system manager’s mode, while the second is the user’s mode. Until the system is completely tested, the model will be run in the user’s mode. In this mode, the user is not permitted to deal with static data. Instead, he can edit dynamic data through the Access user interface developed for this purpose. It is therefore recommended that the first installation and configuration of this tool in any given irrigation district be supervised by engineers of **MWRI** properly trained in the Access version of the crop water needs calculation tool.

7.5 User Interface

The user interface of the water needs Access tool allows the user to accomplish all MISD relevant activities in a user friendly way. Besides, it contains some quality control features that provide the user with validation checks on cropped areas for each canal in the district. In the following few paragraphs, the user is presented with the set of menus and screens developed in this tool.

7.5.1 Main Menu and Welcome Screen

Once the user clicks the icon named “MISD_tool.mdb”, a welcome screen displays for a few seconds, this screen contains information about the program license, and technical support contact information. Figure 7-1 shows the welcome screen and the main menu bar of the water needs tool. The menu bar on the top of the screen, contains some built in office items, and items specific to the **MISD** tool.

The built in items are namely the File, Edit, Tools, Windows, and Help items. Those are common tools of Microsoft Office, and will be used in further development of the system. They can also be utilized by the user to issue Windows- and Office-common commands and operations. This screen displays for few seconds to be followed by another window (Access form) that shows the **MISD** procedure that should be followed in order to fully utilize this tool. Figure 7-2 is a snapshot of the procedure form. Each activity in this procedure form has a corresponding menu/pop-up menu item in the user interface of the water needs tool.

7.5.2 Data Entry, Main Menu Item

Through this menu item, the user can accomplish all required data entry operations. Once the user click on the main menu “Data Entry” item, a popup menu displays showing only one choice. That is to display data entry main form. Figure 7-3 shows the main menu bar and the popup menu of the “Data Entry” menu item. When choosing this item, an Access form is

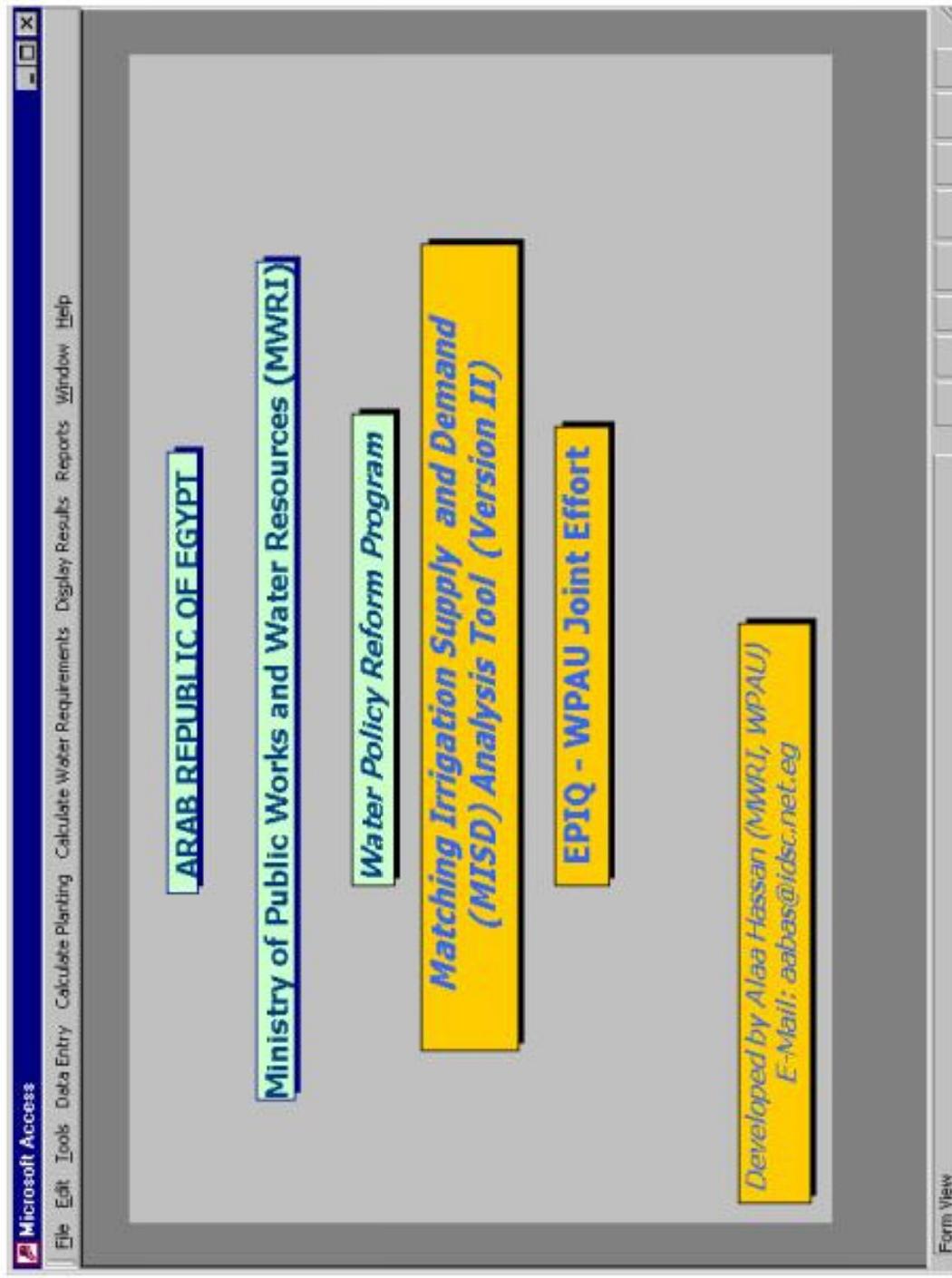


Figure 7-1. Crop water needs tool welcome screen.



Figure 7-2. Crop water needs tool procedure.

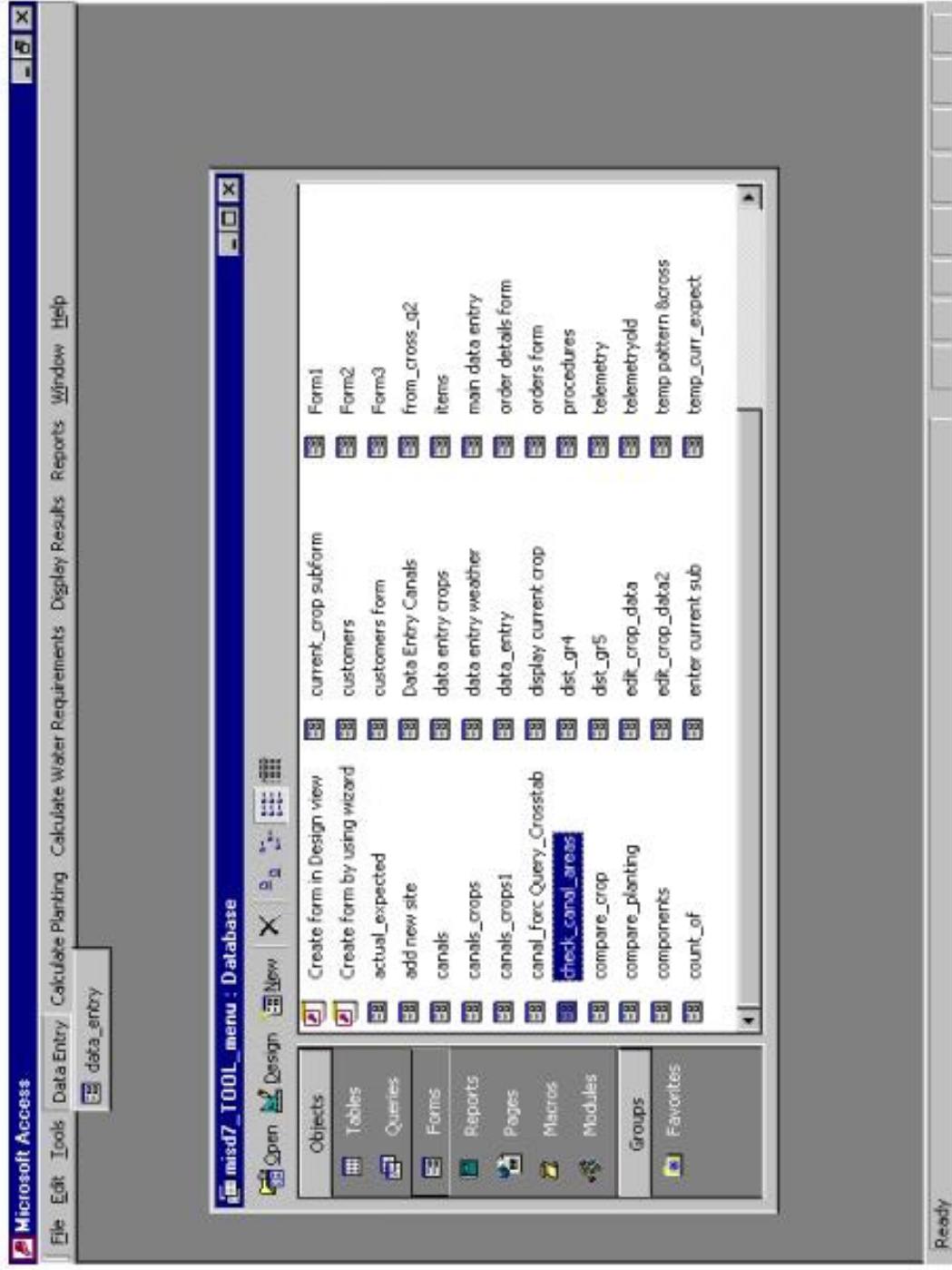


Figure 7-3. Main menu and data entry pop up menu.

displayed to the user showing all possible data entry operations. Figure 7-4 shows the “Data Entry” form with the six options for the user to choose from. The form also displays information for the last period for which crop data are available in the data base, the recommended period for data entry, and the current date and current half-month time period (1 to 24). Out of the six options displayed, four options are enabled, namely the Add New, Edit, Copy and Delete cropping pattern for a specific period of the 24 (half-month) periods of the year. Other operations are only allowed for the system manager and they deal with the editing of district configuration data. The details of each option are as follows:

- 1- Add New Crop: This option displays a list box having all the crops available in the database for the user to choose from. A note is put on this same form as a reminder for the user to always include Fallow as one of the chosen crops. Figure 7-5 shows the list box displaying all crops available in the current database. When the user chooses the list of crops that needs to be entered, it is automatically assumed that he is editing data for the period following the last period available in the database. Again the recommended period is displayed in the “Data entry” form below the label box titled **“Recommended time period to add”**, on the two text boxes displaying the year and the time period.

If the user is regularly entering data, he/she would choose this option during the current period and she/he would be entering data for actual current and next (expected) time periods. Seeing Figure 7-4, one can observe that the last available cropping pattern record in “Abo Hommos” irrigation district of “Behira” general directorate, is the record corresponding to period 13 of the year 2001. The next period to add, therefore, is the 14th period of the same year. The Access tool queries the data base and displays this for user information.

Note:

If the current period is the last period in this year, then the next time period will be calculated as the first period (January 1 to 15) of next year.

Once the user chooses to continue, another form will appear allowing the user to enter cropped areas for all chosen crops and for every canal in the district. Figure 7-6 shows one such data entry form for “Abo Hommos” district and for period 14 of year 2001. The user can scroll through all canals by changing the canal navigation button at the bottom of the form and can scroll through all crops using the crop navigation button at the middle of the form. For this district, 29 canals are configured, and at this time period three crops are only included. For each canal, the user can change the crop name and enter current and expected areas for the crop he chooses.

This form has a checksum for the canal that the user is currently editing and two text boxes. The first shows the sum of areas entered for the canal while the second shows the area left unregistered for this same canal. This is intended to be a guide for the user in order for her/him to validate that the sum of cropped areas for the current canal should exactly match its total area served. The form also has a checksum button, which displays an “OK” message whenever the canal passes the validation test. It is therefore recommended that **after entering all data for current canal, the checksum button is pushed for further data validation.**

Microsoft Access - [data_entity : Form]

ES File Edit Tools Date Entry Calculate Planting Calculate Water Requirements Display Results Reports Window Help

MISD DATA ENTRY

Data Entry Options

- Add New Crop Pattern**
- Add New Crop Pattern
- Edit Old Crop Pattern
- Edit Canals
- Edit Crops
- Copy Last Pattern
- Delete Specific Period

Today 1/27/02

CURRENT PERIOD 2 OF YEAR 2002

LAST PERIOD IN DATA BASE 13 2001 ▶

Recommended Period To Add

Year	Period
2001	14

Form View

Figure 7-4. Data entry form options.

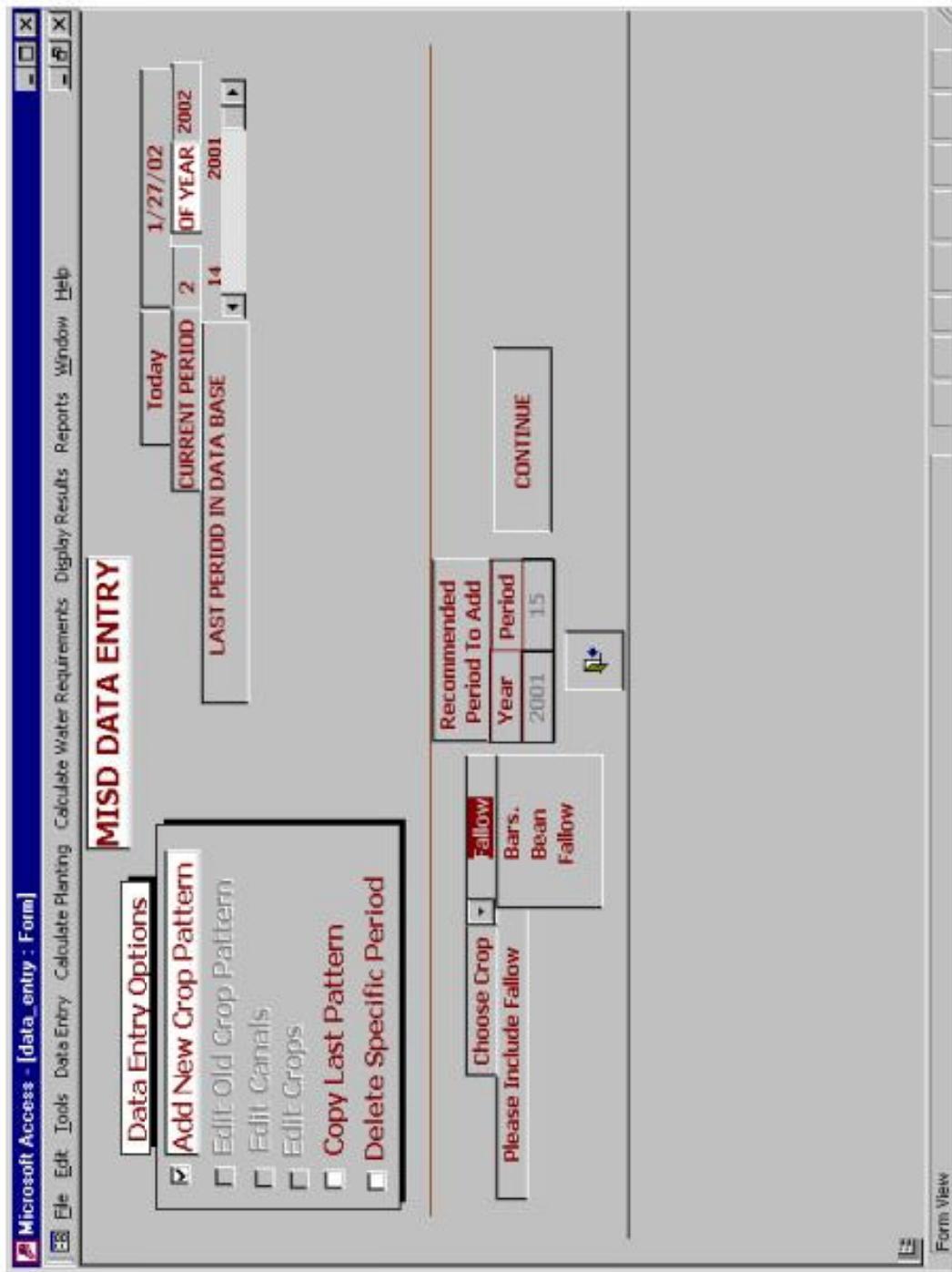


Figure 7-5. User input through the crop list box.

Microsoft Access - [canals]

File Edit Tools Data Entry Calculate Planting Calculate Water Requirements Display Results Reports Window Help

Canal No **canal** **Hanlaşa/markaz** **Area Served (feddans)**

Canal No	Year	Period	Canal No	Crop Name	Current	Expected
3 Bestoway	2001	15	3	Bean	1050	790

Change Crop **Total Current Area** **1050 (Feds.)**

Record: **1** **2** **3** of 3 **2245**

Area Left Unquertered

Check Sum for Current Canal

Change Canal **Exit**

Record: **1** **2** **3** **4** **5** of 29

Form View **Caps**

Figure 7-6. Add crop data entry screen one.

It can be seen in Figure 7-6 that the registered area is less than the canals area served, while in Figure 7-7 the match occurs, and a message is displayed saying:

“Cropped Area Matches Area Served (OK)”

This message is displayed when the user presses the checksum button after registering areas for all crops irrigated by this canal. If the user wants to quit this form, another similar form occurs, but this time showing the number of unmatched canals and again allowing the user to re-edit those canals. Figure 7-8 shows one such form where only one canal passed the validity check, since the number of unmatched canals is 28.

Again, if the user decides to quit the data entry screen, a form will be displayed for a last validation check. This form is shown in Figure 7-9. This form shows the number of canals failing the checksum together with a list box displaying the list of canal names. The user is then given three save options: (1) quit and delete entered data, (2) return to previous screen, and (3) save the entered data.

- 2- Edit Old Crop Pattern: Here the user can choose any available period in the database and start editing all canals as shown above. The only difference between this operation and the previous one is that the user here edits old (or previously entered) record (period) – while in option 1, he adds a new period to the database.
- 3- Edit Canals: This is a part of the district's configuration process, it is only available for the system manager and will be discussed in details in a system manager's manual that is separate from this report. Here, the system manager adds a canal record to the database, the record includes canal names, area served and the district to which the canal belongs.
- 4- Edit Crops: This is the same as Edit Canals except that, the crop record includes crop ID, name and whether this is a perennial or non-perennial crop.
- 5- Copy Last Pattern: This feature allows the user to copy the last period's crop data to the current period. It is to be noted that the copy feature does not just allow the user to copy any period to any other one. This is again to preserve continuity in data records and to prevent having gaps in the database. As will be seen in Chapter 8, continuity in the database produces accurate results. When the user chooses this option, the program will start the copy process.
- 6- Delete Specific Period (Crop Pattern): This option allows for the deletion of data for a certain period. If the user chooses to do so, an Access form will be displayed showing the user all the available periods. Now that period 14 has been edited, the database has records up to period 14 of year 2001, and the recommended period to add is the 15th period of year 2001 (see Figure 7-10). Figure 7-11 shows the form designed for deletion, in this form a list box showing all records available in the database is displayed. The user can choose from the list of available periods, the record for which the cropping pattern is to be deleted.

Note: Gaps in the database are not recommended, the user should always delete last period available in the database and the copy option automatically copies the last available period to a new following one.

Microsoft Access - [canals]

File Edit Tools Date Entry Calculate Planting Calculate Water Requirements Display Results Reports Window Help

Canal No	canal	Handasa/markaz	Area Served (feddans)
1	Abo Tahoon	Abou Hommos	3105

Year	Period	Canal No	Crop Name	Current	Expected
► 2001	15	1	Bars.	1000	0

Change Crop	Total Current Area	3105 (Feds.)
Record: 1 1 1 1 1 1 of 3	◀ ▶ ▷ ▷ ▷ ▷	◀ ▶ ▷ ▷ ▷ ▷

Area left unregistered

Cropped Area Matches Area Served (OK)

Check sum for current Canal

Change Canal

Form View

Figure 7-7. Crop entry screen one, canal checksum message.

Microsoft Access [check_canal_areas]

File Edit Tools Data Entry Calculate Planning Calculate Water Requirements Display/Results Reports Window Help

Canal	No Area (Feds.)	District
Balket Atlas	2476	Abou Hammous

Crop Details

Year	Period	Canal N	Crop Name	Current	Expecte
► 2011	15	2	Barts.	0	0

Change Crop

Total Current Area	0 (Feds.)
Record: 1 of 3	1 2 3 & 3

Area Unregistered for Current canal 2476 (Feds.)

No of Unmatched Canals: 20 Check Total Area for Current Canal

Save Data

Change Canal

Record: 1 of 28 1 2 3 & 28 of 28

Form View

Figure 7-8. Crop entry screen two, number of canals failing validation test.

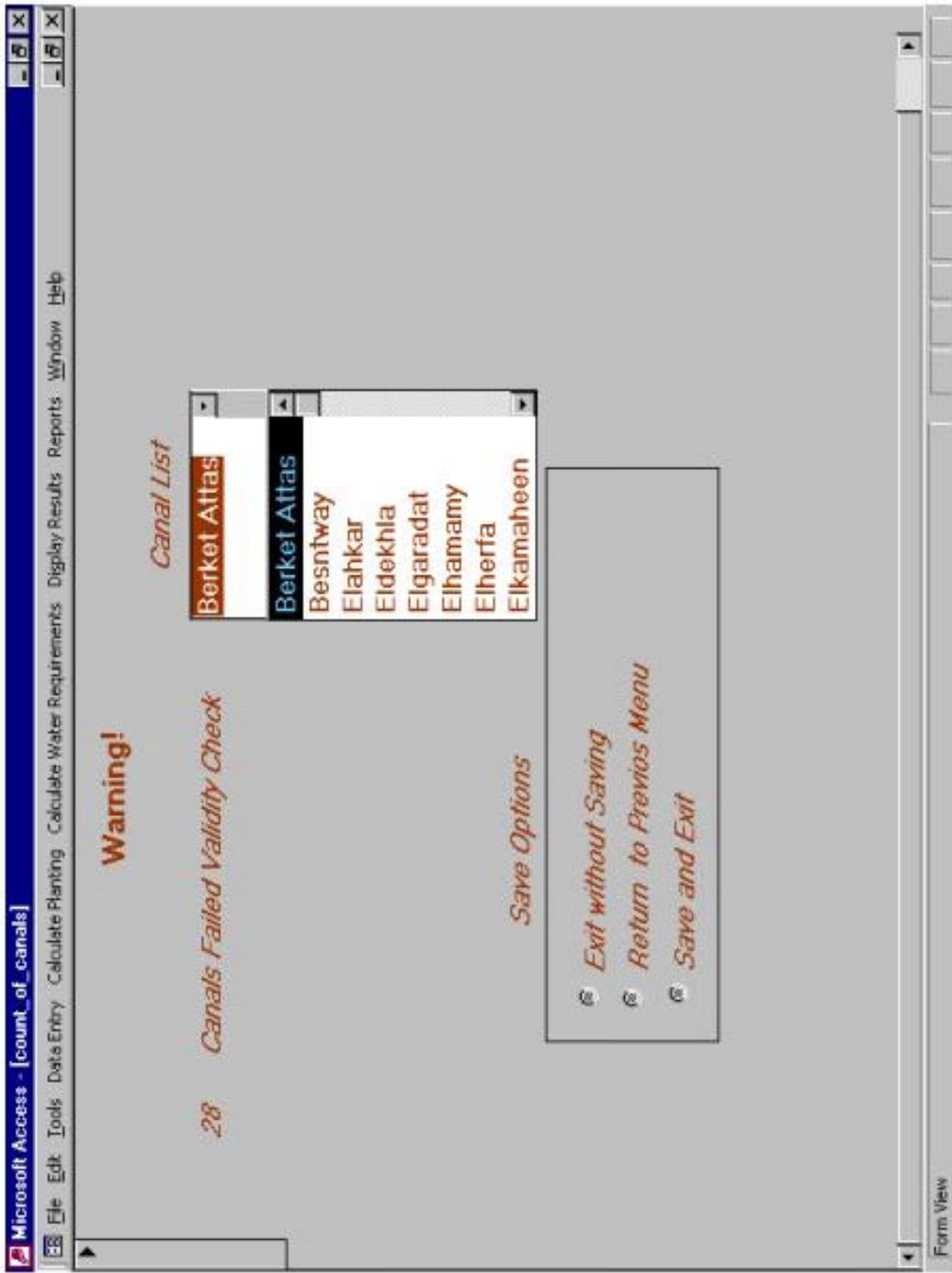


Figure 7-9. List of canals failing checksum and save options.

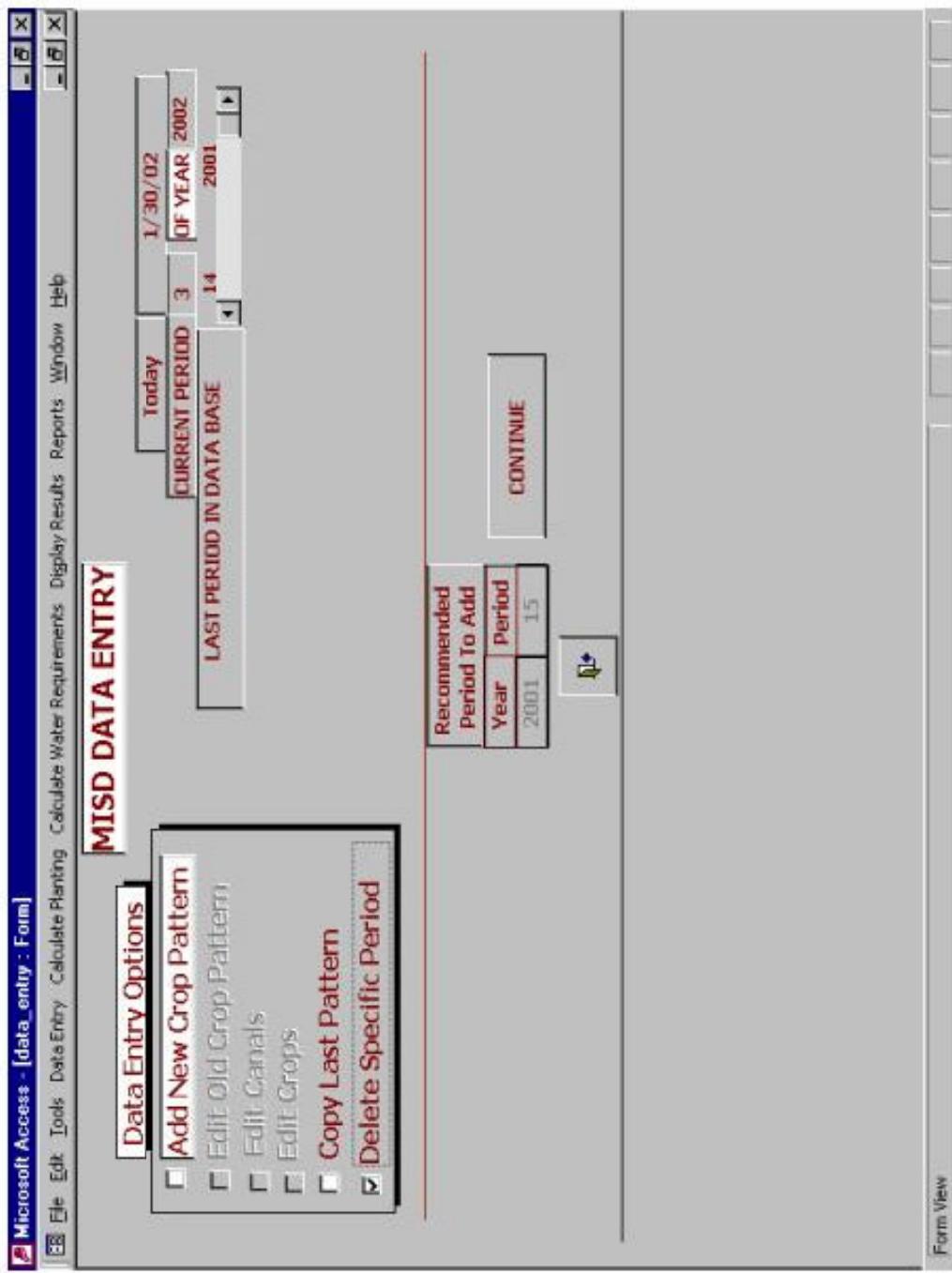


Figure 7-10. Last available data period and period recommended to add.

Delete Specific Period **Abo Hommos District**

Choose Period *Your Choice To Delete*

Period No. 14 Of Year 2001	
2001	7
2001	8
2001	9
2001	10
2001	11
2001	12
2001	13
2001	14

Delete **Cancel**

Form View

Figure 7-11. Delete option form, list of available periods.

7.5.3 Calculate Planting, Main Menu Item

This is a main menu item that displays a popup menu allowing the user to start calculating planting and expected planting for all available historic patterns. The first is calculated as the difference between current and previous area for each crop and canal. While the second is calculated as the difference between the next (expected) and the current area for each crop and canal in the district. The two items thus initiate two separate calculation procedures and simply prompt the user with a “**Calculation completed**” message after termination (see Figure 7-12).

Note:

- 1- *It is recommended to do this step after data entry is accomplished and before water requirements are calculated.*
- 2- *Menu items specific to this tool occur in the main menu bar in the order that should be followed for efficient and accurate utilization of this tool. Please refer to the procedures form presented above.*

7.5.4 Calculate Water Requirements, Main Menu Item

Figure 7-13 shows the “Calculate Water Requirements” menu and pop-up menu items. This is also a specific water needs tool, prepared for the user such that he can easily calculate current and expected water requirements, respectively, through first and second pop-up items. This is actually the main purpose of the crop water needs program. It is advised that this step be done after “Calculate Planting” and “Data Entry” activities have been done. The two procedures calculate water needs for all time periods, canals, and crops available in the data base. These two programs are initiated by clicking the pop-up menu items and again the programs display a successful completion message after termination.

Note:

- 1- *In order to ensure data integrity, the procedures for calculating current water requirements, initiates planting calculations programs before starting its specific calculation procedure. This is done in order to avoid any discrepancies that may occur if the user forgets to run planting calculation procedures.*
- 2- *For detailed information about the model, please refer to Chapters 4 to 6 of this report.*

7.5.5 Display Results, Main Menu Item

Through this item, the user is presented with a tool for observing and analyzing configuration and historic information (see Figure 7-14). There are four groups of information to be displayed through the pop-up menu of this main menu item as follows:

1. Water Requirement Historic Data: This presents a form on which the user can choose the start time (period number and year) and end time for displaying data.
2. Crop Information: This includes graphical and text display information about crop coefficients, comparison of historic crop areas for a certain year, canal, and crop in the data base; and same kind of comparison for expected crop areas.
3. Weather Information: This includes information about semi-monthly values of evapo-transpiration and rainfall depth (mm) within the district.

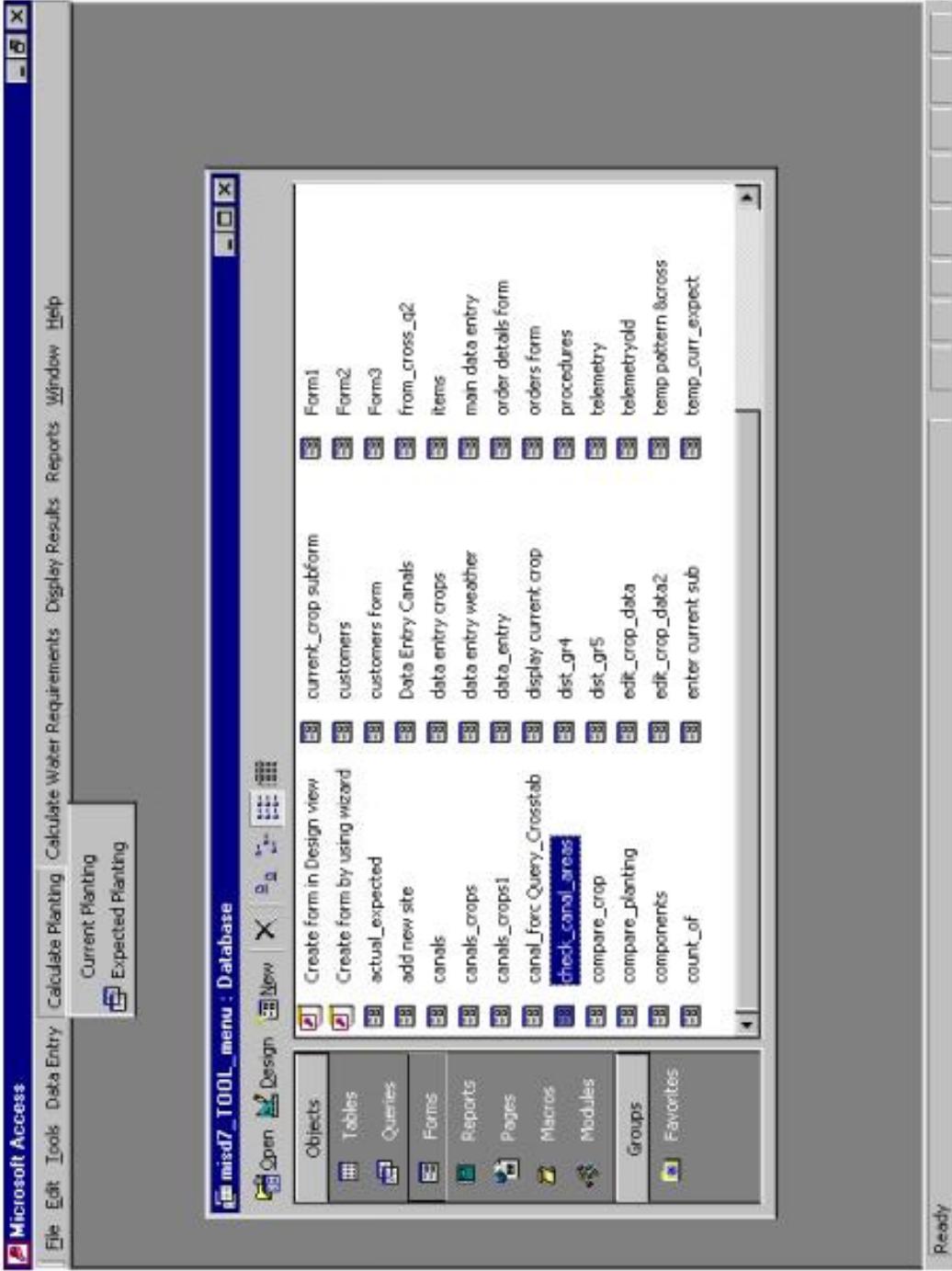


Figure 7-12. Calculate planting main and pop up menus.

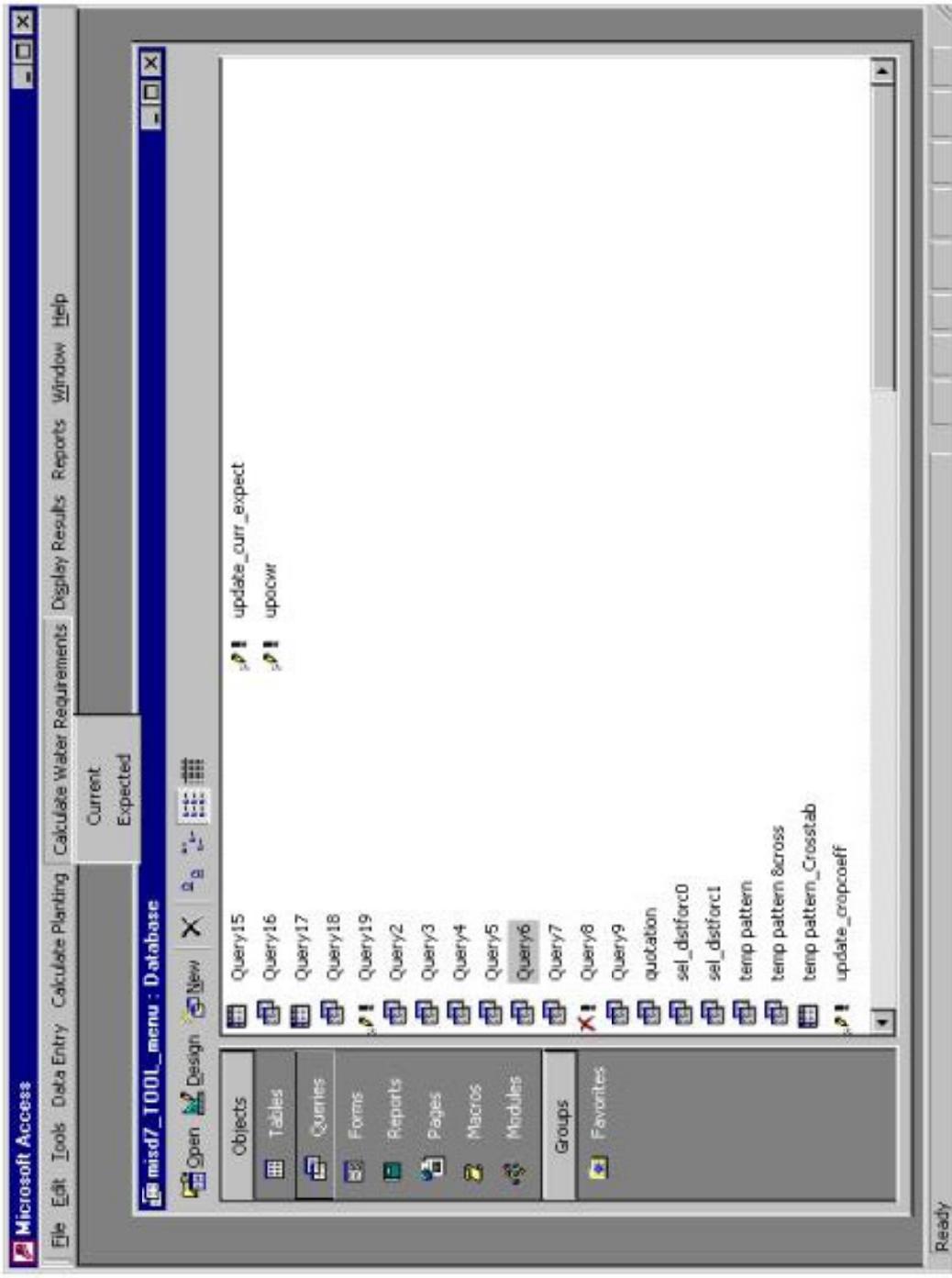


Figure 7-13. Calculate water needs main and pop up menus.

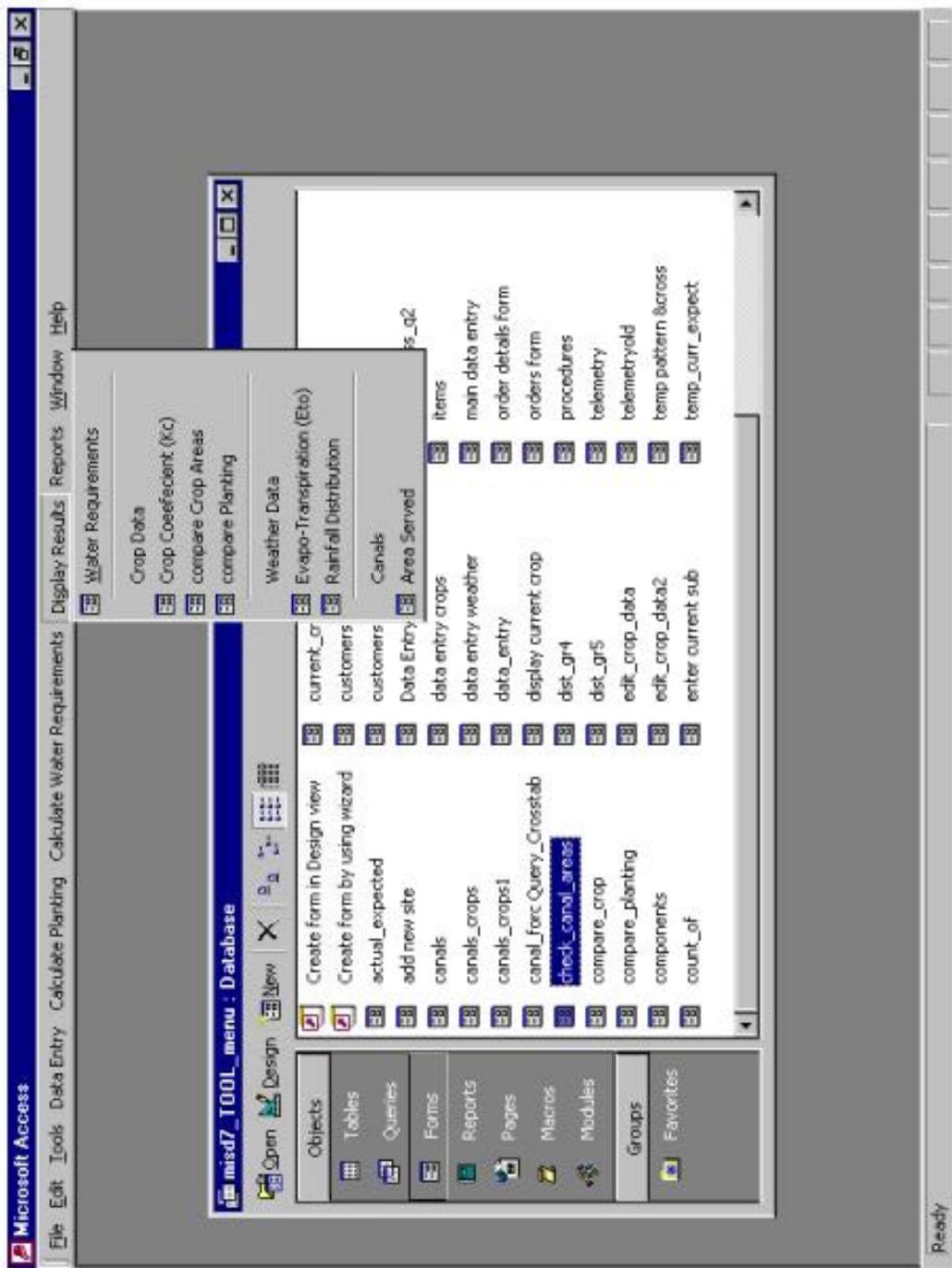


Figure 7-14. Display results main and pop up menus.

4. Canal Information: Including canal IDs, area served, and the name of the district to which the canal belongs.

7.5.6 Report Generation, Main Menu Item

This menu item helps the user generate reports on historic water needs, cropped areas, planting for individual canals and for the whole district for a defined period of time. Figure 7-15 shows the form having four types of reports for the user to generate. It can be seen that the user can preview, print, and send the report to higher administrative levels of the ministry (see Figure 7-16). The report will be sent as an e-mail attachment that will be displayed to the user to enable her/him to edit the message including changing any other pre-set attributes.

Note:

1. *This step assumes that Microsoft Outlook is installed within the Microsoft Office software on the district's computer where this tool is to be run.*
2. *E-mail configuration is part of the district's specific configuration.*

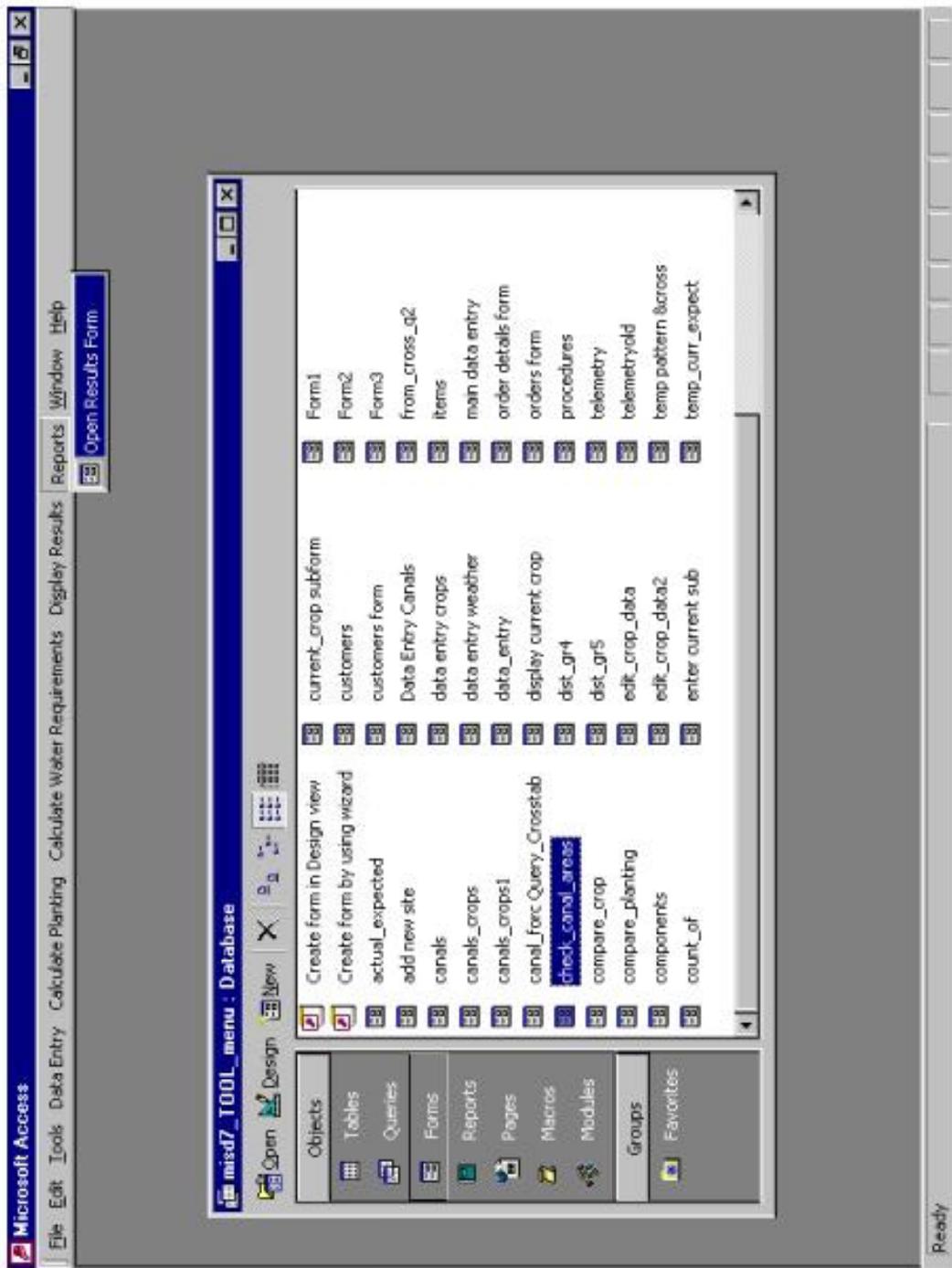


Figure 7-15. Reports main and pop up menus.

Microsoft Access - [dist_gi5 : Form]

File Edit Tools Data Entry Calculate Planting Calculate Water Requirements Display Results Reports Window Help

MISD Results For Abo Honomos District

Reports / Results

- Cropping Pattern*
- Canal Forecast*
- District Forecast*
- Seasonal Statistics*

PRINT

PRINT PREVIEW

Form View

A screenshot of a Microsoft Access form titled "MISD Results For Abo Honomos District". The form has a dark blue header bar with standard menu items: File, Edit, Tools, Data Entry, Calculate Planting, Calculate Water Requirements, Display Results, Reports, Window, and Help. Below the header is a large title bar with the same text. Underneath the title bar, there is a section labeled "Reports / Results" containing four radio button options: "Cropping Pattern", "Canal Forecast", "District Forecast", and "Seasonal Statistics". To the right of these options are two buttons: "PRINT" and "PRINT PREVIEW". At the bottom right of the form area, it says "Form View".

Figure 7-16. Reports generation form.

8 Crop Water Needs Microsoft Access District Analysis

8.1 Introduction

Chapter 7 describes the User Interface of the Microsoft Access version of the MISD Crop Water Needs tool. This chapter discusses results obtained from utilizing this tool in analyzing crop patterns and calculating canal water requirements at the district level. Examples are given as to how to use this tool to systematically accomplish MISD tasks. The procedure followed here is similar to that displayed in the user interface of the crop water needs tool on the procedure form of the welcome screen (see Figure 8-1). This form will remain opened as long as the program is running and the user did not intentionally close it. This is meant to be a reminder for the district engineer (or any other user) of the different MISD tasks.

Also, Chapter 7 gives an extensive description of the data entry activity. Measures to ensure data quality and integrity are embedded in the data entry screens/forms. After data entry of observed and projected cropping pattern information, the next steps are to start calculations, analyze data, generate reports, and send water needs reports to higher levels within the Ministry. The district engineer (or other user) is advised to proceed as follows:

8.2 Observe Configuration Data

Before starting any calculation, the user is advised to observe the district's configuration data. This is the static data of the system and the user is only allowed to view it. Water calculations are very sensitive to this type of data so the user must be sure of having the right description of the canal system, crop definitions and coefficients, and the weather data that are appropriate for the district. The user should select the "display results" main menu option (see Figure 8-2) to display crop, canal, and weather data from the corresponding pop-up menu item. Figures 8-3 through 8-5 show configuration data for the "Abou Hommos" district of the "Beheira" directorate. In the current step, the user should make sure that all canals are included and that they have the right area served by each canal. Also he/she should make sure that all crops for all seasons are included and that crop coefficient and other crop definitions are correct and that semi-monthly weather data are realistic.

Note:

- 1- Calculation of water requirements depends on the whether or not the crop is perennial.*
- 2- If any inconsistency arises in these data, the district engineer should contact the ministry headquarters to re-configure the district's tool.*

8.3 Check Crop Pattern

If the user is satisfied that all canals and possible crops are included in the data base, she/he should go ahead and enter data for first time period if it is the first time she/he enters data to the system. However in this chapter, it is assumed that the district engineer has enough data to analyze historical crop patterns and crop water needs. For the purpose of this discussion, it is assumed that the district engineer at "Abou Hummus" has entered data for October 16-31 (period 20), 2000 through July 1-15 (period 13), 2001. The engineer should then enter new

data and analyze crop pattern results for any canal, crop, and specific period of interest. This is shown in Figure 8-6 and can be viewed by choosing the “Compare Crop Pattern” pop-up menu item of the “Display Results” main menu. In this figure, the user has chosen a comparison between current and historical cropped areas for rice on the El-Herfa canal in 2001. Since data are not available beyond period 13, the graph displays records from period 1 to period 13 of same year (2001). The user can also make further validation by choosing to print the crop pattern report using the reports main menu item. Figure 8-7 shows the report generation form of the water needs user interface. The user selects the crop pattern report option on this form to generate a report for Herfa canal for the periods 1 through 12, 2001. Table 8-1 shows a snapshot for period 1, 2001 from the output report.

This report has an advantage in that it compares the cropped area on a certain canal for all available periods in the system’s database. A check is implemented to ensure that the total cropped area (including fallow) matches the total area served. Again this is another tool for the district engineer that helps revise data and remove any inconsistency.

Note:

The last existing crops are for period 13 (July 1-15) and the next period (period 14) has projected cropping area “Expected” to exist in the next half-month (July 16-31).

8.4 Calculate Planting

Next, the user should initiate calculations for current planting and expected planting using the “Calculate Planting” main menu item as follows:

8.4.1 Current Planting

Click the pop-up menu item titled “Current” to initiate the calculation of current planting. Table 8-2 shows a text format of the Visual Basic procedure developed for that purpose.

8.4.2 Expected Planting

Click the pop-up menu item titled “Expected” to initiate the calculation of expected planting using Microsoft SQL query language. Table 8-2 shows a text format of the query designed for that purpose.

8.5 Check Planting

In order to check the output of the previous step, the district engineer can follow the same steps as in section 8.3 to display a comparison of expected and current planting for a specific year and crop on a certain canal. Figure 8-8 depicts such a comparison for year 2001 and rice on the El-Herfa canal.

8.6 Calculate Water Needs

In this step the district engineer will start running the model for calculating water needs for all canals and crops within the district. It should be noted that the engineer should not start this step before validating data as shown in the previous steps. However, the macro developed for calculating water requirement is designed to automatically initiate planting calculations before starting the water requirements calculation procedure.

In order to start the calculations, the district engineer should choose the “Calculate Water Requirements” main menu item and one of the following pop-up menu items:

8.6.1 Current Needs

Choose the “Current” menu item of the pop-up menu to run the Visual Basic procedure developed to calculate the water needs for all available time periods on all canals in the district. Water needs are calculated based on crop, weather, and canal data. The procedure sums the current water requirements for all crops on every canal in the district and generates historical data files for canals and the district’s current water needs. Table 8-4 shows the Visual Basic source code for the procedure to derive current water requirements for all time periods in the database.

8.6.2 Expected Needs

Choose the “Expected” item of the pop-up menu to run the Visual Basic procedure developed to calculate the water needs for all available time periods in the water system. Water needs are calculated based on crop, weather, and canal data. The procedure sums expected water requirement for all crops and every canal in the district and generates historical data files for all canals and for the district’s expected water needs. Table 8-5 shows the Visual Basic source code for the procedure to derive expected water requirements for all time periods in the database.

8.7 Analyze Water Needs

At this stage the district engineer should look at the model’s output and look at the water requirements for each canal and the current and expected water needs for the district. The water needs tool generates many graphics and reports for comparing historic water needs with the most recent needs for canals and for the whole district. Figures 8-2 and 8-7 show the “Display Results” main menu item and the report generation form from the reports main menu item. These two items are considered the main means for analyzing MISD data.

8.7.1 Display Results

Figure 8-11 shows a comparison between current and expected water needs for the Abou Hommos district in million cubic meters. Through this option, the user can display water needs for any set of data available in the database of the crop water needs tool. It can be seen that the user can choose a start and an end date for the comparison. The district engineer can also print the graph displayed by clicking the “Print Graph” button on that same form.

8.7.2 Generate Reports

The report form allows the district engineer considerable flexibility for report generation. The form is designed such that the user can select a report type, enter a selection of report parameters, and preview, print, or send the report by e-mail. However, it is recommended that the user preview the report before printing or sending it via e-mail. This preview is very important since the size of the generated report varies according to the time span required by the user, especially in the case of crop pattern reports. The district engineer can generate

canal forecast reports (Table 8-6 and Figure 8-9), seasonal statistics for a specific canal (Table 8-7), and historical water needs on the district level (Table 8-8 and Figure 8-10).

8.8 Send Water Needs Report to Irrigation Directorate

The ultimate goal of this tool is to enhance data transfer procedures by utilizing state of the art technology and information systems. When the user is satisfied with the results obtained, she/he can simply select any report option and click the “send e-mail” icon (the command button to the right of the print command button). This will initialize a macro that puts an e-mail message in the outbox of Microsoft Outlook with the specified report attached in a rich text format (Microsoft Word compatible). When the user decides to send an e-mail to the directorate, the mail message will show up on a typical e-mail outlook composer window. This allows the user to edit or save the attached file, the pre-set message, or any other attribute of the e-mail composer.

Figure 8-12 shows the e-mail composer with the district forecast report attached. If the user is connected to the internet he/she can directly send the report. Otherwise, the e-mail message will remain in the outbox of Outlook Express and will automatically be sent whenever the user is online.

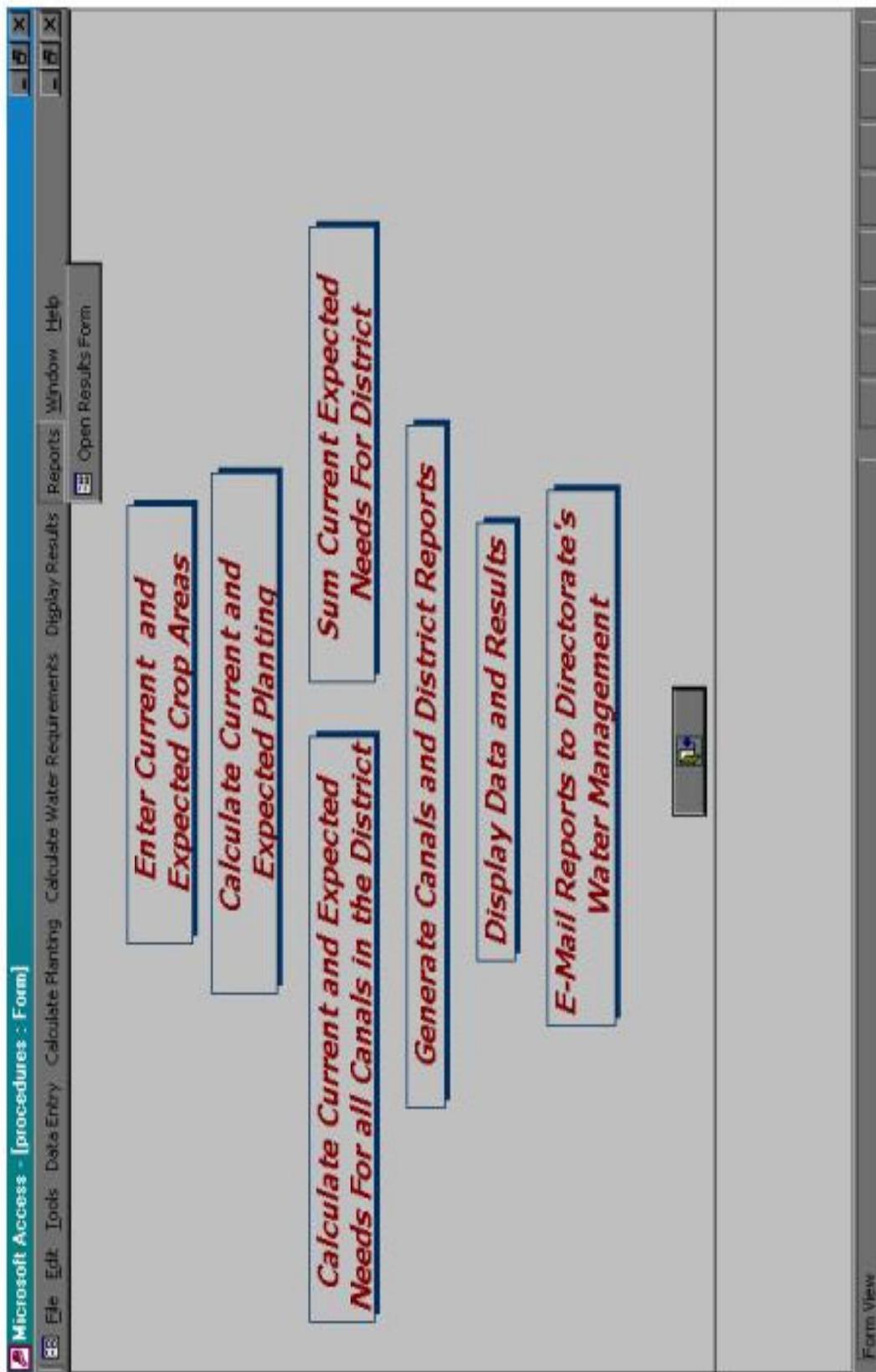


Figure 8-1. MISD procedures form.

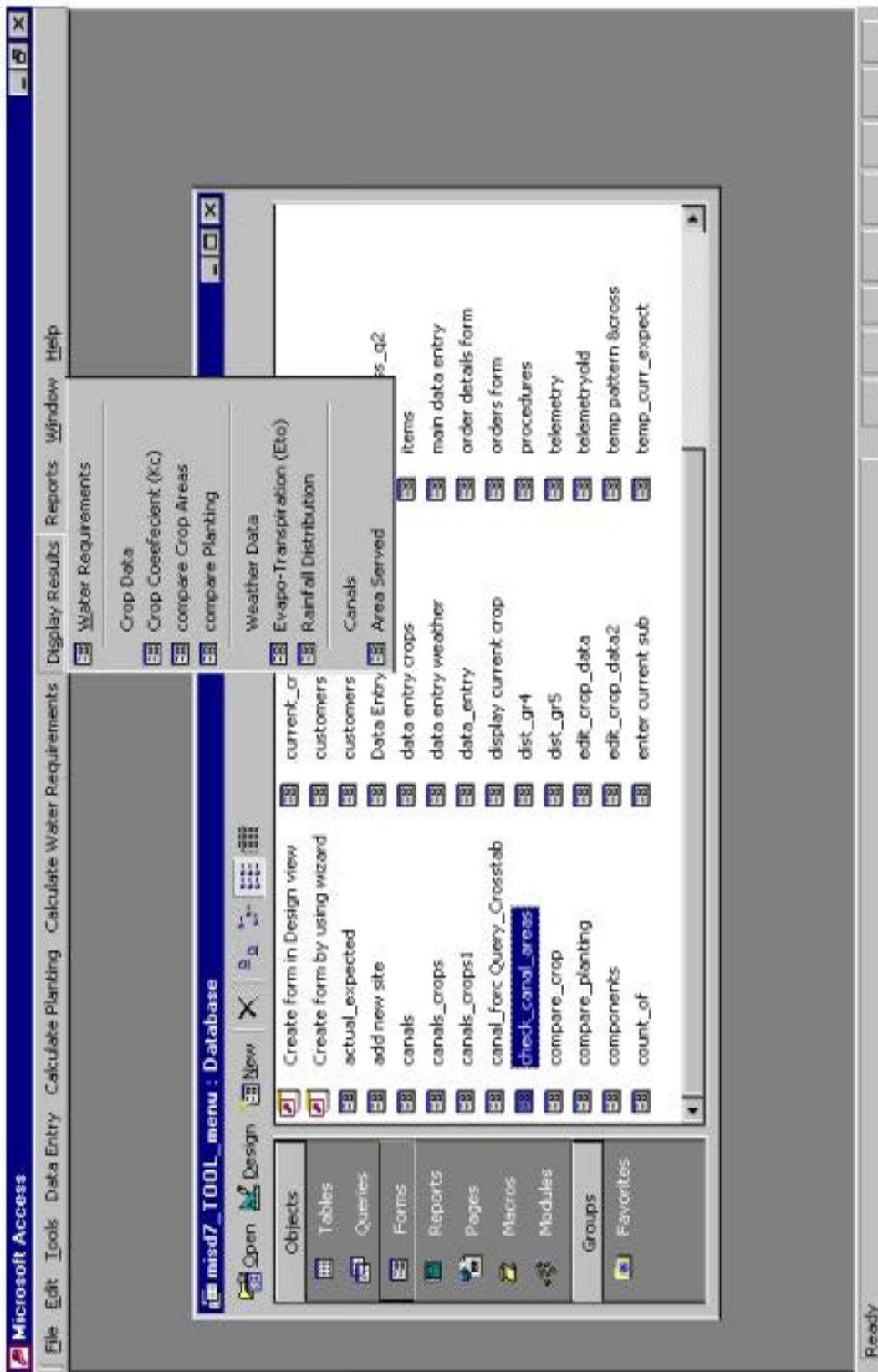


Figure 8-2. Display results pop up menu.

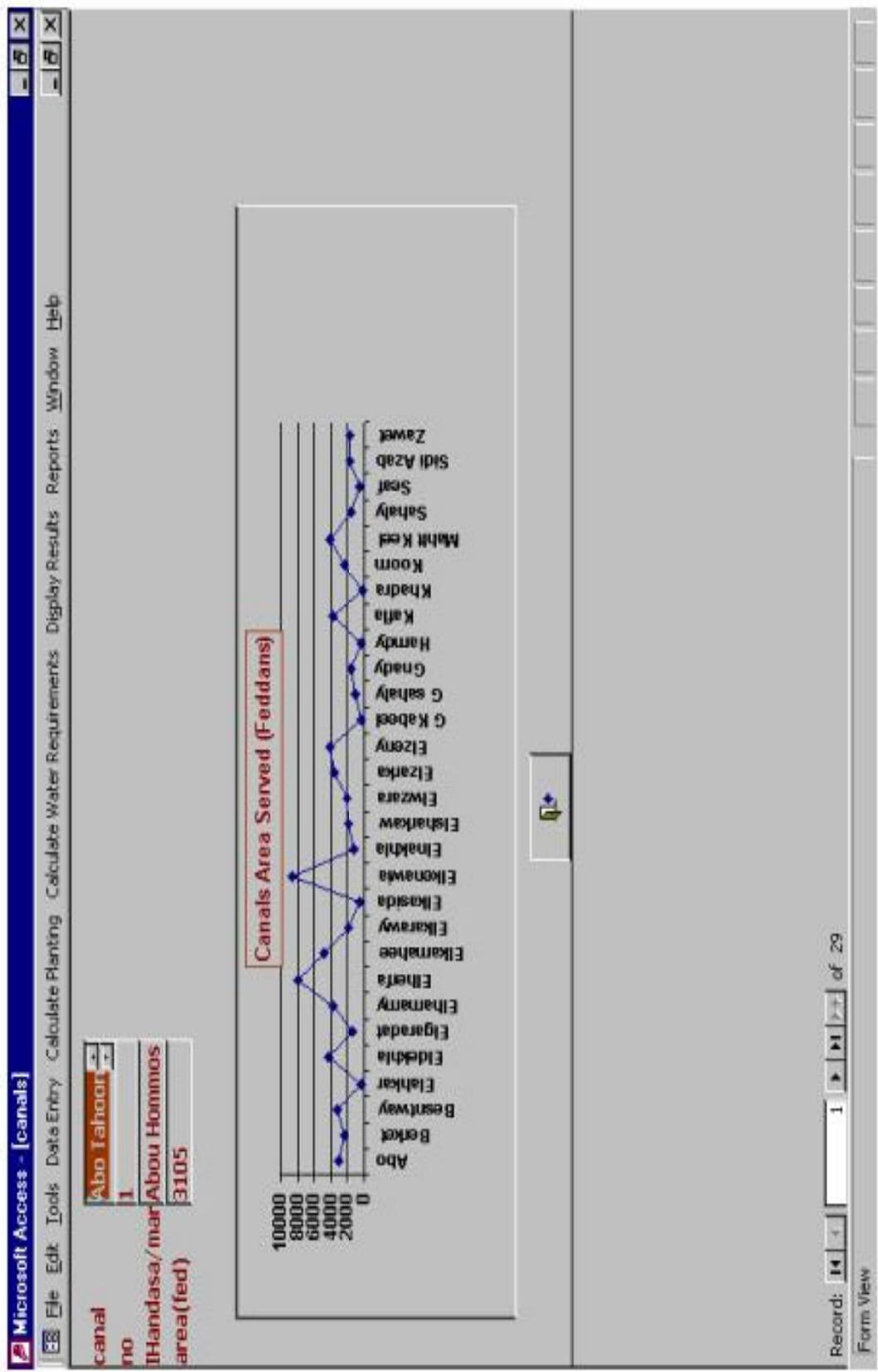


Figure 8-3. Canal configuration data for Abou Hommos Irrigation District.

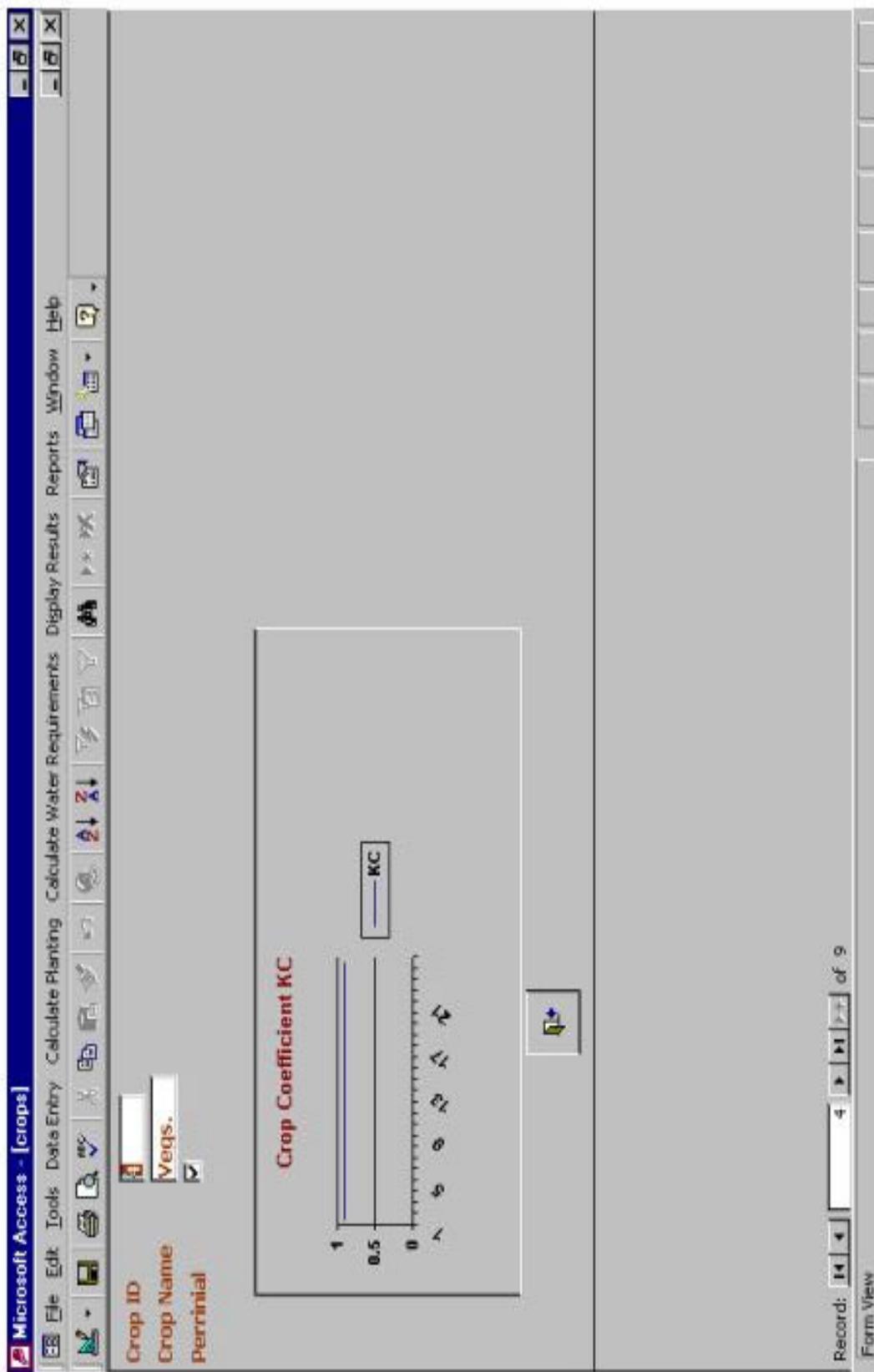


Figure 8-4. Crop data for Abou Hummus.

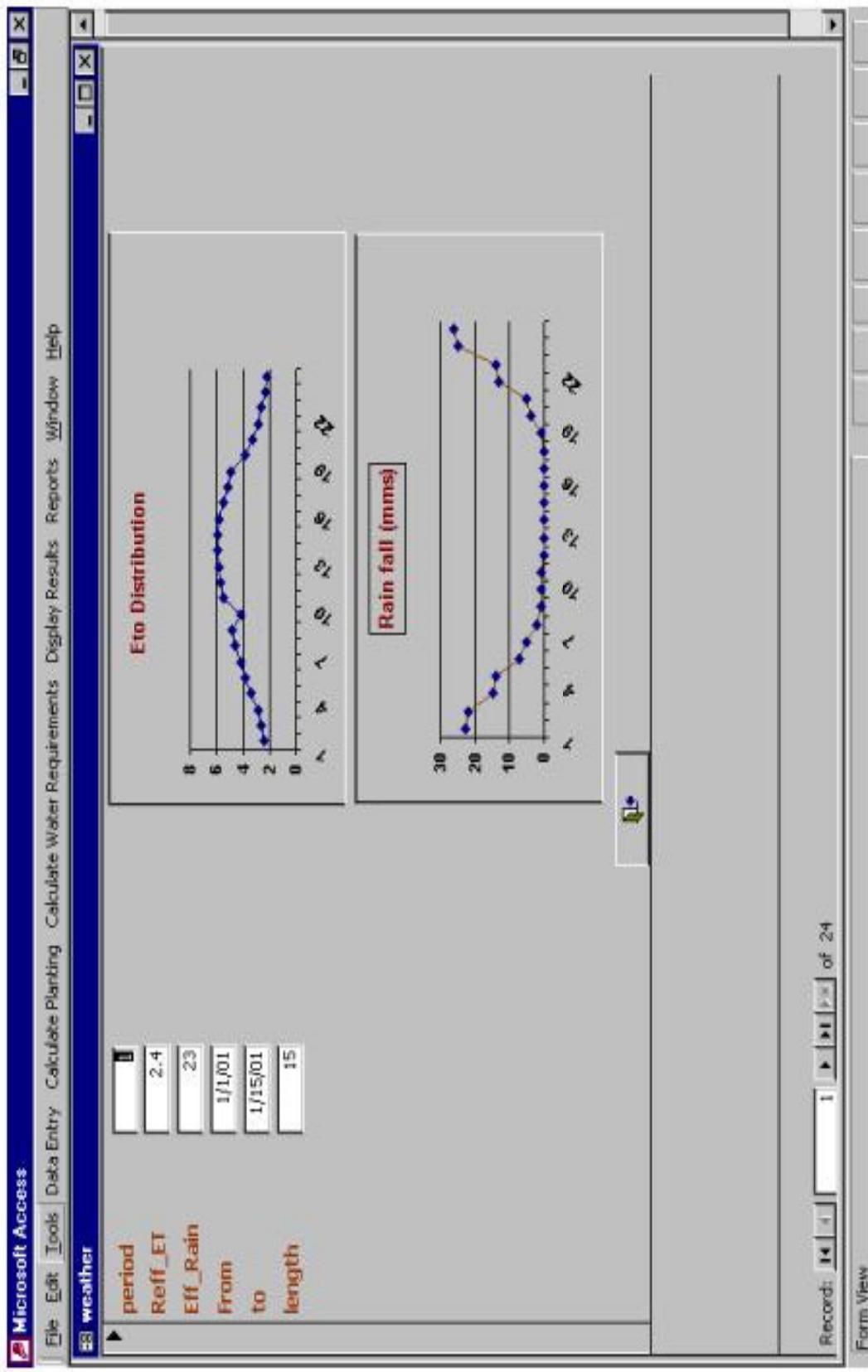


Figure 8-5. Weather data for Abou Hammus.

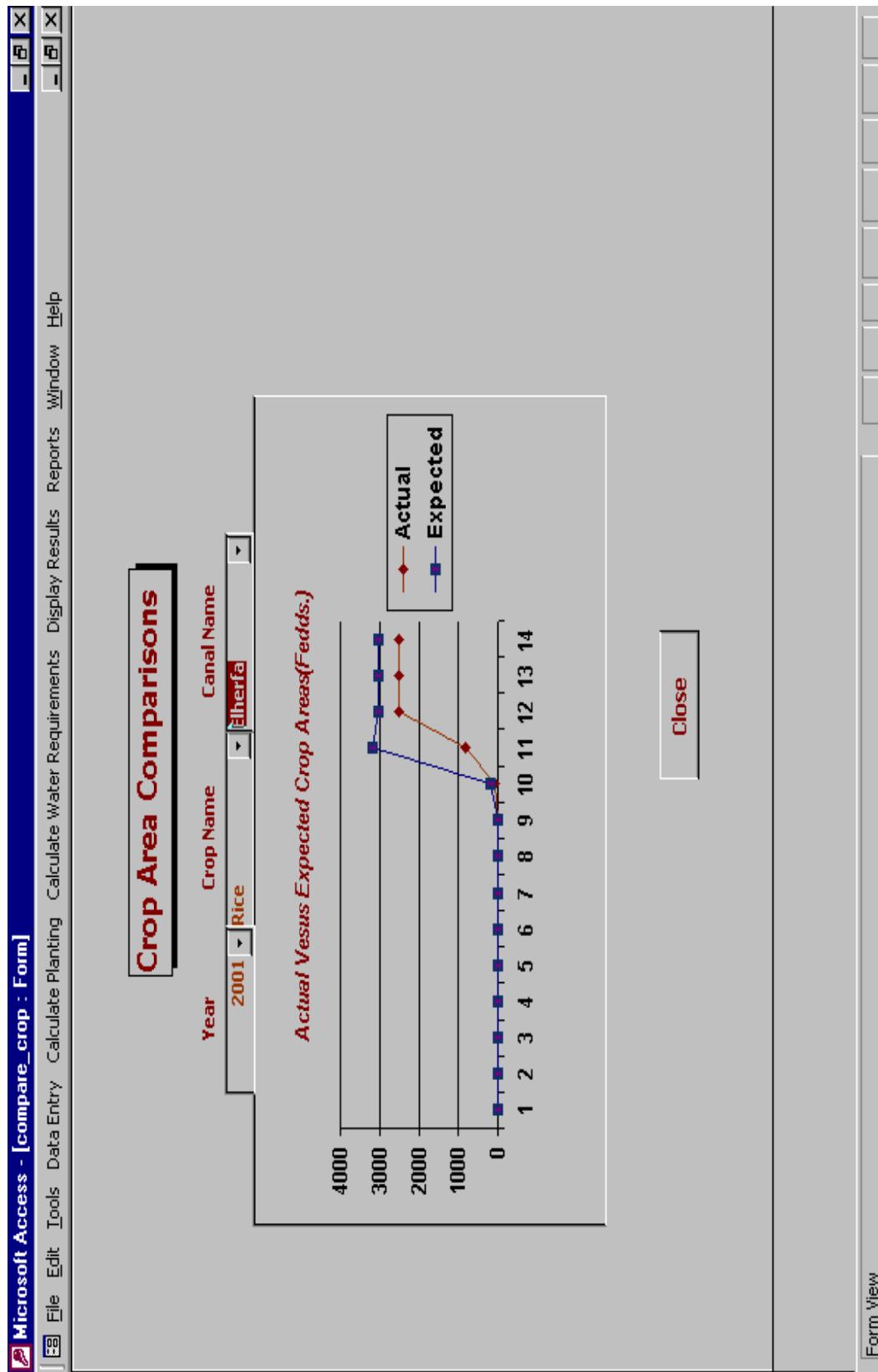


Figure 8-6. Comparison of actual and expected crop areas of rice on El Herfa Canal for 2001.

Microsoft Access - [dist_gu5 : Form]

File Edit Tools Data Entry Calculate Planning Calculate Water Requirements Display Results Reports Window Help

MISD Results For Abo Honomos District

CANAL

Elherfa

Reports / Results

Cropping Pattern
 Canal Forecast
 District Forecast
 Seasonal Statistics

Start Date End Date

2001 2001

Period No. 1 Of Year
2001

Period No. 12 Of
Year 2001

PRINT

PRINT PREVIEW

Form View

A screenshot of a Microsoft Access form titled "MISD Results For Abo Honomos District". The form has a "CANAL" section with a dropdown menu set to "Elherfa". Below this is a "Reports / Results" section containing four radio button options: "Cropping Pattern", "Canal Forecast", "District Forecast", and "Seasonal Statistics". To the right of these options are two date fields: "Start Date" and "End Date", both currently set to "2001". Underneath these date fields is a table with two rows: "Period No. 1 Of Year" and "Period No. 12 Of Year 2001". At the bottom of the form are two buttons: "PRINT" and "PRINT PREVIEW". On the far right, there is a vertical scroll bar and a "Form View" button.

Figure 8-7. Crop pattern report parameters (canal name, start date, end date).

Table 8-1. Crop pattern report for El Herfa Canal.

Cropping Pattern For Abou Hummus District							
Year	Period	Canal	Area Served	Crop	Crop Area	% Of Canal Area	
2001	1	Elherfa	7959	Bean	288	4	
2001	1	Elherfa	7959	Wht.	4038	51	
2001	1	Elherfa	7959	Vegs.	74	1	
2001	1	Elherfa	7959	Gards.	0	0	
2001	1	Elherfa	7959	Cott.	0	0	
2001	1	Elherfa	7959	Rice	0	0	
2001	1	Elherfa	7959	Maize	0	0	
2001	1	Elherfa	7959	Fallow	0	0	
2001	1	Elherfa	7959	Bars.	3559	45	
					Totals	7959	100%
							Page 1 of 13

Thursday, January 24, 2002

Table 8-2. Current planting calculation procedure.

Option Compare Database

Option Explicit

Sub planting()

```

DoCmd.SetWarnings False
Dim mydb As Database
Dim current As Recordset
Dim expected As Recordset
Dim crop As Recordset
Dim canal As Recordset
Dim period As Recordset
Dim coeff As Recordset
Dim dates As Date
Dim p, pp, yy, cyy As Integer
Dim cl As Integer
Dim cr As Integer
Dim i, j, k, fyear, fperiod, lyear,lperiod As integer
Dim duty As Variant
Dim sumw As Variant
Dim suma As Variant
Dim sumak As Variant
Dim sumocwr, prevcurr, cc As Variant
Set mydb = CurrentDb
Set current = mydb.openrecordset("current_crop")
Set expected = mydb.openrecordset("expected_crop")
Set crop = mydb.openrecordset("crops")
Set canal = mydb.openrecordset("canals")
Set coeff = mydb.openrecordset("coeff_crop")
Set period = mydb.openrecordset("period")
current.Index = "PRIMARYKEY"
expected.Index = "PRIMARYKEY"
crop.Index = "primarykey"
canal.Index = "PRIMARYKEY"
coeff.Index = "primarykey"
MsgBox "Calculating Planted areas for current period"
    cyy = year(date)
    canal.MoveFirst
    Do While Not canal.EOF
        cl = canal![no]
        crop.MoveFirst
        Do While Not crop.EOF
            k = 1
            cr = crop![Crop_ID]
            current.MoveFirst
            prevcurr = 0
            For i = 2000 To cyy
                For j = 1 To 24
                    current.Seek "=", i, j, cl, cr
                If Not current.NoMatch And Not current.EOF Then
                    current.Edit
                End If
            If k = 1 Then

```

Table 8-2. (Continued).

```
current!["planting"] = current!["area"]
    k = k + 1
End If
cc = current!["area"] - prevcurr
If cc < 0 Then
    cc = 0
End If
current!["planting"] = cc
prevcurr = current!["area"]
current.Update
End If
Next j
If k = 1 Then k = k + 1
current.Seek "=", i, j, cl, cr
Next i
crop.MoveNext
Loop
canal.MoveNext
Loop
MsgBox "Calculations Completed"
End Sub
```

Table 8-3. SQL statement for calculating expected planting.

```
Expected Planting SQL statement
UPDATE (crops INNER JOIN current_crop ON crops.Crop_ID =
current_crop.crop_id) INNER JOIN expected_crop ON (current_crop.period =
expected_crop.period) AND (current_crop.year = expected_crop.year) AND
(current_crop.canal_id = expected_crop.canal_id) AND (crops.Crop_ID =
expected_crop.crop_id) SET expected_crop.explant =
IIf([expected_crop].[area]<[current_crop].[area],0,[expected_crop].[area]-[current_crop].[area]);
```

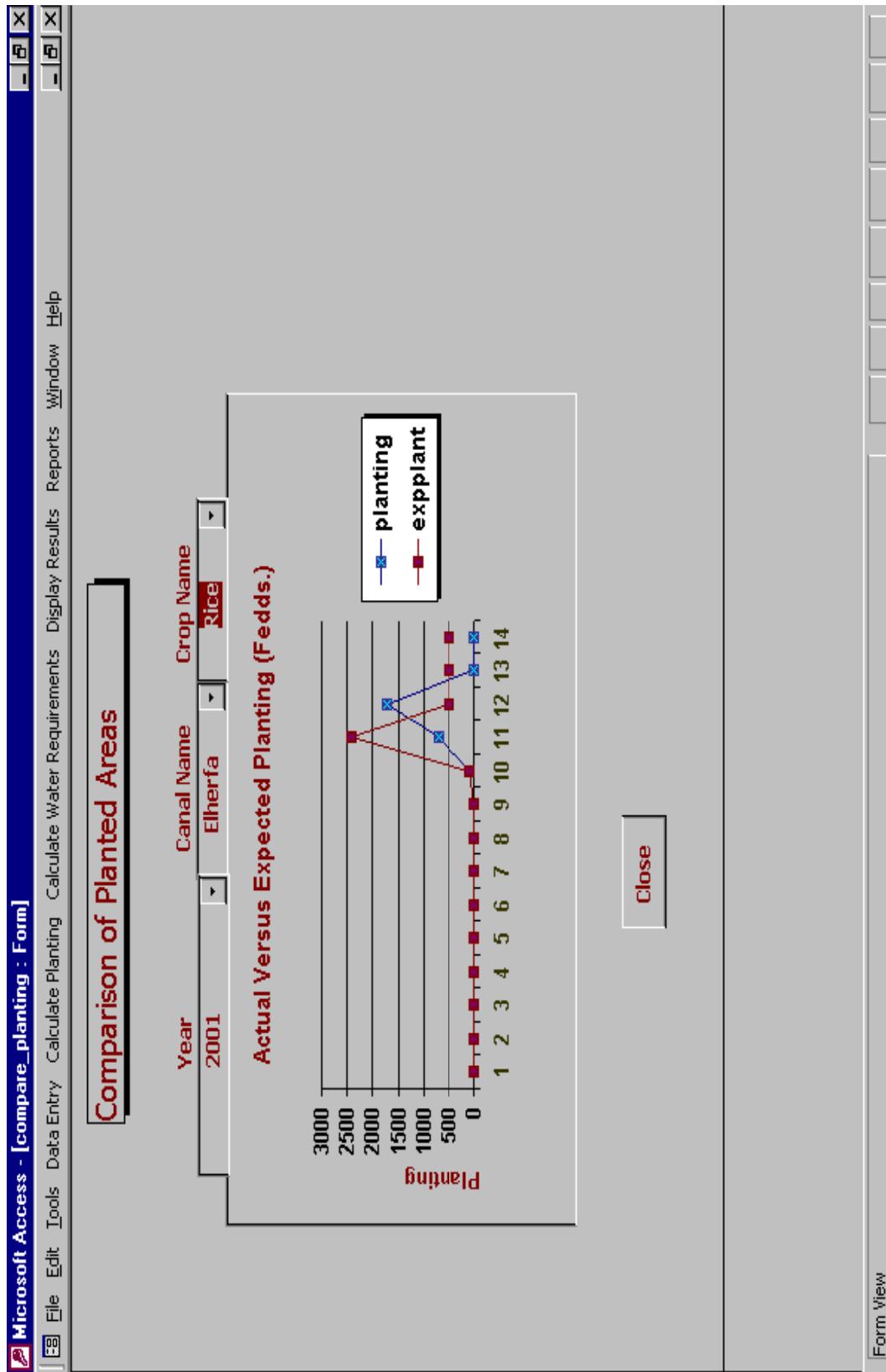


Figure 8-8. Comparison of actual planting and expected planting.

Table 8-4. Current water requirements calculation procedure.

```

Attribute VB_Name = "current"
Option Compare Database
Option Explicit
Function current_req()
    DoCmd.SetWarnings False
    Dim mydb As Database
    Dim current As Recordset
    Dim expected As Recordset
    Dim crop As Recordset
    Dim canal As Recordset
    Dim period As Recordset
    Dim coeff As Recordset
    Dim weather As Recordset
    Dim canalforc As Recordset
    Dim distforc As Recordset
    Dim logs As Recordset
    Dim dates As Date
    Dim p, pp, yy, cyy As Integer
    Dim cl, Ingh As Integer
    Dim cr As Integer
    Dim i, j, k, l, fyear, fperiod, lyear, lperiod, lj, cp, ll As Integer
    Dim kcarea, carea, et, rf, sumdist, sumclwr, clwr, mn As Double
    Dim c_coeff As Single
    Dim sumocwr, prevcurr, ocwr As Double
    Set mydb = CurrentDb
    Set current = mydb.openrecordset("current_crop")
    Set expected = mydb.openrecordset("expected_crop")
    Set crop = mydb.openrecordset("crops")
    Set canal = mydb.openrecordset("canals")
    Set coeff = mydb.openrecordset("coeff_crop")
    Set weather = mydb.openrecordset("weather")
    Set canalforc = mydb.openrecordset("canal_forecast")
    Set distforc = mydb.openrecordset("dist_forecast")
    Set logs = mydb.openrecordset("log")
    current.Index = "PRIMARYKEY"
    expected.Index = "PRIMARYKEY"
    crop.Index = "PRIMARYKEY"
    canal.Index = "PRIMARYKEY"
    coeff.Index = "PRIMARYKEY"
    weather.Index = "PRIMARYKEY"
    canalforc.Index = "PRIMARYKEY"
    distforc.Index = "primarykey"

    MsgBox "Calculating Water Requirement For Current Period"
    ' Define first available data record for each crop/canal
    '-----'
    logs.MoveFirst
    fyear = logs![fyear]
    fperiod = logs![fperiod]
    '-----'
    ' start from the 14th record
    '-----'
    ' ffperiod = fperiod + 14
    ' Beyond the 24th period, step to next year
    '-----'
    ' If ffperiod > 24 Then

```

Table 8-4. (Continued).

```

' fperiod = fperiod + 14 - 25
' fyear = fyear + 1
' End If
'
'Define last available record for that crop/canal
'
lyear = logs![lyear]
lperiod = logs![lperiod]
'
'for each time period in historic crop file
'
    i = fyear
    Do While i < lyear + 1
        j = 1
        lj = 24
        If i = fyear Then
            j = fperiod
        End If
        If i = lyear Then
            lj = lperiod
        End If
        Do While j < lj + 1
            sumdist = 0
            canal.MoveFirst
        '
    'for each canal in canal db
    '
        Do While Not canal.EOF
            sumclwr = 0
            cl = canal![no]
            weather.MoveFirst
            weather.Seek "=", j
            If Not weather.NoMatch And Not weather.EOF Then
                et = weather![Reff_ET]
                rf = weather![Eff_Rain]
                lngth = weather![length]
            End If
        '
    'and every crop in crop db
    '
        crop.MoveFirst
        Do While Not crop.EOF
            sumocwr = 0
            kcarea = 0
            carea = 0
            cr = crop![Crop_ID]
            cp = crop![onoff]
            If cr = 10 Then Exit Do
            If cp = 1 Then
                coeff.MoveFirst
                coeff.Seek "=", cr, j
            If Not coeff.NoMatch And Not coeff.EOF Then
                c_coeff = coeff![coeff]
                ocwr = coeff![ocwr]
            End If
            current.MoveFirst
            current.Seek "=", i, j, cl, cr
            If Not current.NoMatch And Not current.EOF Then current.Edit
        
```

Table 8-4. (Continued).

```

clwr = (((c_coeff * et) - (rf / lnth)) / 0.7)

If current![area] > 0 Then
    clwr = clwr + (ocwr / lnth / current![area])
    mn = 50 / lnth
    If clwr > 0 And clwr < mn Then
        clwr = mn
    End If
    If clwr <= 0 Then
        clwr = 0
    End If
    current![two_weeks] = clwr *(current![area] * 4.2)
    Else
        current![two_weeks] = 0
        clwr = 0
    End If
    current![kc] = c_coeff
    current![kcavg] = c_coeff
    current![duty] = clwr
    clwr = current![two_weeks]
    current.Update
End If
' non perr.
Else
    For l = 13 To 1 Step -1
        ll = j - l + 1
        If ll < 1 Then
            ll = ll + 24
            yy = i - 1
        Else
            yy = i
        End If
    ' Seek for lagged kc in coeff. db
    -----
    coeff.MoveFirst
    coeff.Seek "=", cr, l
    If Not coeff.NoMatch Then
        c_coeff = coeff![coeff]
        ocwr = coeff![ocwr]
    End If
    weather.MoveFirst
    weather.Seek "=", j
    If Not weather.NoMatch Then
        et = weather![Reff_ET]
        rf = weather![Eff_Rain]
        lnth = weather![length]
    End If
    'Seek planting for 0-2 weeks forecast in current crop db.
    -----
    current.MoveFirst
    current.Seek "=", yy, ll, cl, cr
    If Not current.NoMatch And Not current.EOF Then
        kcarea = kcarea + (current![planting] * c_coeff)
        sumocwr = sumocwr + (ocwr * current![planting])
        carea = carea + current![planting]
        If i = yy And j = ll Then
            current.Edit
        If current![area] = 0 Then

```

Table 8-4. (Continued).

```

current![two_weeks] = 0
clwr = 0
Else
    If carea > 0 Then
        clwr = ((kcarea / carea * et) - (rf / lngh)) / 0.7
        current![kc] = kcarea / carea
    End If
    clwr = clwr + (sumocwr / lngh / current![area])
    If clwr < 0 Then
        clwr = 0
    End If
    mn = 50 / lngh
    If clwr < mn Then
        clwr = mn
    End If
End If
current![duty] = clwr
current![two_weeks] = clwr * (current![area]*4.2)
current![kcavg] = kcarea
clwr = current![two_weeks]
current.Update
End If
End If
Next l
End If
sumclwr = sumclwr + clwr
crop.MoveNext
Loop
canalforc.Seek "=", cl, i, j
If Not canalforc.NoMatch And Not canalforc.EOF Then
    canalforc.Edit
    canalforc![canal_id] = cl
    canalforc![year] = i
    canalforc![period] = j
    canalforc![forecast0] = sumclwr '* lngh) / 1000000
    canalforc.Update
Else
    canalforc.AddNew
    canalforc![canal_id] = cl
    canalforc![year] = i
    canalforc![period] = j
    canalforc![forecast0] = sumclwr '* lngh) / 1000000
    canalforc.Update
End If
sumdist = sumdist + sumclwr
canal.MoveNext
Loop
distforc.Seek "=", i, j
If Not distforc.NoMatch And Not distforc.EOF Then
    distforc.Edit
    distforc![year] = i
    distforc![period] = j
    distforc![forecast0] = sumdist ' * lngh ) / 1000000
    distforc.Update
Else
    distforc.AddNew
    distforc![year] = i
    distforc![period] = j

```

Table 8-4. (Continued).

```
distforc![forecast0] = sumdist' * lngh ) / 1000000
distforc.Update
End If
j = j + 1
Loop
i = i + 1
Loop
MsgBox "Calculations Completed"
End Function
```

Table 8-5. Expected water requirements calculation procedure.

```

Attribute VB_Name = "expected"
Option Compare Database
Option Explicit
Function expected_req()
    DoCmd.SetWarnings False
    Dim mydb As Database
    Dim current As Recordset
    Dim expected As Recordset
    Dim crop As Recordset
    Dim canal As Recordset
    Dim period As Recordset
    Dim coeff As Recordset
    Dim weather, canalforc, distforc, logs As Recordset
    Dim dates As Date
    Dim p, pp, yy, cyy As Integer
    Dim cl, lngth, cp As Integer
    Dim cr, newj, newi As Integer
    Dim i, j, k, l, lj, lyear, fyear, lperiod, fperiod, ll As Integer
    Dim karea, carea, et, rf, sumdist, sumclwr, clwr, mn As Double
    Dim c_coeff As Single
    Dim sumocwr, prevcurr, ocwr, expect_four As Double
    Set mydb = CurrentDb
    Set current = mydb.openrecordset("current_crop")
    Set expected = mydb.openrecordset("expected_crop")
    Set crop = mydb.openrecordset("crops")
    Set canal = mydb.openrecordset("canals")
    Set coeff = mydb.openrecordset("coeff_crop")
    Set weather = mydb.openrecordset("weather")
    Set canalforc = mydb.openrecordset("canal_forecast")
    Set distforc = mydb.openrecordset("dist_forecast")
    Set logs = mydb.openrecordset("log")
    current.Index = "PRIMARYKEY"
    expected.Index = "PRIMARYKEY"
    crop.Index = "PRIMARYKEY"
    canal.Index = "PRIMARYKEY"
    coeff.Index = "PRIMARYKEY"
    weather.Index = "PRIMARYKEY"
    canalforc.Index = "PRIMARYKEY"
    distforc.Index = "primarykey"
    MsgBox "Calculating Water Requirement For Next Period"
    '
    ' Define first available data record for each crop/canal
    '
    logs.MoveFirst
    fyear = logs![fyear]
    fperiod = logs![fperiod]
    '
    ' Beyond the 24th period, step to next year
    '
    ' ffperiod = fperiod + 12
    ' If ffperiod > 24 Then
    '     fperiod = fperiod + 12 - 25
    '     fyear = fyear + 1
    ' End If
    '
    ' Define last available record for that crop/canal
    lyear = logs![lyear]

```

Table 8-5. (Continued).

```

lperiod = logs![lperiod]
'-----
'for each time period in historic crop file
    i = fyear
    Do While i < lyear + 1
        j = 1
        lj = 24
        If i = fyear Then
            j = fperiod
        End If
        If i = lyear Then
            lj = lperiod
        End If
        Do While j < lj + 1
            weather.MoveFirst
            weather.Seek "=", j + 1
            If Not weather.NoMatch And Not weather.EOF Then
                et = weather![Reff_ET]
                rf = weather![Eff_Rain]
                lngh = weather![length]
            End If
        '-----
        'for each canal in canal db
        '-----
        sumdist = 0
        canal.MoveFirst
        Do While Not canal.EOF
            sumclwr = 0
            cl = canal![no]

        '-----
        ' and every crop in crop db
        '-----
        crop.MoveFirst
        Do While Not crop.EOF
            sumocwr = 0
            kcarea = 0
            carea = 0
            cr = crop![Crop_ID]
            cp = crop![onoff]
            If cr = 10 Then Exit Do
        '-----
        ' perrinials
        '-----
        If cp = 1 Then
            coeff.MoveFirst
            coeff.Seek "=", cr, j
            If Not coeff.NoMatch And Not coeff.EOF Then
                c_coeff = coeff![coeff]
                ocwr = coeff![ocwr]
            End If
            expected.MoveFirst
            expected.Seek "=", i, j, cl, cr
            If Not expected.NoMatch And Not expected.EOF Then
                expected.Edit
                clwr = (((c_coeff * et) - (rf / lngh)) / 0.7)
                If expected![area] > 0 Then
                    clwr = clwr + (ocwr / lngh / expected![area])
            End If
        End If
    End Do
End Do

```

Table 8-5. (Continued).

```

mn = 50 / lngh
If clwr > 0 And clwr < mn Then
    clwr = mn
End If
If clwr <= 0 Then
    clwr = 0
End If
expect_four = clwr * (expected![area] * 4.2)
Else
    expect_four = 0
    clwr = 0
End If
expected![four_weeks] = expect_four
expected![kc] = c_coeff
expected![kcavg] = c_coeff
expected![duty] = clwr
clwr = expected![four_weeks]
expected.Update

End If
'-----
' non perr.
'-----

Else
    For l = 11 To 0 Step -1
        ll = j - 1
        If ll < 1 Then
            ll = ll + 24
            yy = i - 1
        Else
            yy = i
        End If
    ' Seek for lagged kc in coeff. db
    '-----
        coeff.MoveFirst
        coeff.Seek "=", cr, l + 2
        If Not coeff.NoMatch Then
            c_coeff = coeff![coeff]
            ocwr = coeff![ocwr]
        End If
    'Seek planting for 0-4 weeks forecast in expected crop db.
    '-----
        current.MoveFirst
        current.Seek "=", yy, ll, cl, cr
        If Not current.NoMatch And Not current.EOF Then
            kcarea = kcarea + (current![planting] * c_coeff)
            sumocwr = sumocwr + (ocwr * current![planting])
            carea = carea + current![planting]
        End If
        Next l
        coeff.MoveFirst
        coeff.Seek "=", cr, 1
        If Not coeff.NoMatch Then
            c_coeff = coeff![coeff]
            ocwr = coeff![ocwr]
        End If
    End If
End If

```

Table 8-5. (Continued).

```

End If
expected.MoveFirst
expected.Seek "=", i, j, cl, cr
If Not expected.NoMatch And Not expected.EOF Then
    expected.Edit
    kcarea = kcarea + (expected![expplant] * c_coeff)

    sumocwr = sumocwr + (ocwr * expected![expplant])
    carea = carea + expected![expplant]
    If expected![area] = 0 Then
        expect_four = 0
        clwr = 0
    Else
        If carea > 0 Then
            clwr = ((kcarea / carea * et) - (rf / lnth)) / 0.7
                expected![kc] = kcarea / carea
        End If
        clwr = clwr + (sumocwr / lnth / expected![area])
        If clwr < 0 Then
            clwr = 0
        End If
        mn = 50 / lnth
        If clwr < mn Then
            clwr = mn
        End If
        expect_four = clwr * (expected![area] * 4.2)
        expected![duty] = clwr
        expected![four_weeks] = expect_four
        expected![kcavg] = kcarea / carea
        clwr = expect_four
        expected.Update
    End If
End If
End If
sumclwr = sumclwr + clwr
crop.MoveNext
Loop
'-----'
'Update canal Forecast(canal_forecast table), put forecast of next period in current record
'-----'
canalforc.Seek "=", cl, i, j
If Not canalforc.NoMatch And Not canalforc.EOF Then
    canalforc.Edit
    canalforc.forecast1 = sumclwr * lnth) / 1000000
    canalforc.Update
Else
    canalforc.AddNew
    canalforc.canal_id = cl
    canalforc.year = i
    canalforc.period = j
    canalforc.forecast1 = sumclwr * lnth) / 1000000
    canalforc.Update
End If
'-----'
'Put same data in another field, such that next period's canal forecast
'is put in the next period's record
'-----'

```

Table 8-5. (Continued).

```

canalforc.MoveFirst
If j = 24 Then
    canalforc.Seek "=", cl, i + 1, 1
Else
    canalforc.Seek "=", cl, i, j + 1
End If
If Not canalforc.NoMatch Then
    canalforc.Edit
    canalforc.for_shift = sumclwr

If i = lyear And j = lperiod Then
    canalforc.forecast0 = sumclwr
End If
canalforc.Update
Else
    If j = 24 Then
        newj = 1
        newi = i + 1
    Else
        newi = i
        newj = j + 1
    End If
    If i = lyear And j = lperiod Then
        canalforc.AddNew
        canalforc.canal_id = cl
        canalforc.year = newi
        canalforc.period = newj
        canalforc.for_shift = sumclwr
        canalforc.forecast0 = sumclwr
        canalforc.Update
    End If
End If
sumdist = sumdist + sumclwr
canal.MoveNext
Loop
'-----'
'Update district Forecast(dist_forecast table), put forecast of 'next period' in current record
'-----'
distforc.MoveFirst
distforc.Seek "=", i, j
If Not distforc.NoMatch And Not distforc.EOF Then
    distforc.Edit
    distforc.forecast1 = sumdist ' * lnghth ) / 1000000
    distforc.Update
Else
    distforc.AddNew
    distforc.year = i
    distforc.period = j
    distforc.forecast1 = sumdist ' * lnghth ) / 1000000
    distforc.Update
End If
'-----'
' Put same data in another field, such that next period's district
' forecast is put in the next period's record
'-----'
distforc.MoveFirst
If j = 24 Then
    distforc.Seek "=", i + 1, 1

```

Table 8-5. (Continued).

```

Else
distforc.Seek "=", i, j + 1
End If
If Not distforc.NoMatch Then
    distforc.Edit
    distforc.for_shift = sumdist
    If i = lyear And j = lperiod Then
        distforc.forecast0 = sumdist
    End If
    distforc.Update
Else
    If j = 24 Then
        newj = 1
        newi = i + 1
    Else
        newi = i
        newj = j + 1
    End If
    If i = lyear And j = lperiod Then
        distforc.AddNew
        distforc.year = newi
        distforc.period = newj
        distforc.for_shift = sumdist
        distforc.forecast0 = sumdist
        distforc.Update
    End If
    End If
    j = j + 1
Loop
i = i + 1
Loop
MsgBox "Calculations Completed"
End Function

```

Microsoft Access - [dist_gn5 : Form]

File Edit Tools Data Entry Calculate Planning Calculate Water Requirements Display Results Reports Window Help

MISD Results For Abo Hominos District

Reports / Results

- Cropping Pattern
- Canal Forecast
- District Forecast
- Seasonal Statistics

Start Date End Date

2001 2001

Period No. 1 Of Year
2001

Period No. 12 Of
Year 2001

PRINT

PRINT PREVIEW

Form View

This screenshot shows a Microsoft Access form titled 'MISD Results For Abo Hominos District'. At the top, there's a navigation bar with standard menu items like File, Edit, Tools, etc. Below the title, there's a section labeled 'Reports / Results' with four radio button options: 'Cropping Pattern', 'Canal Forecast' (which is selected), 'District Forecast', and 'Seasonal Statistics'. To the right of this section are two dropdown menus for 'Start Date' and 'End Date', both currently set to '2001'. Below these dropdowns are two text boxes: 'Period No. 1 Of Year' containing '2001' and 'Period No. 12 Of Year' containing '2001'. At the bottom of the form are two buttons: 'PRINT' and 'PRINT PREVIEW'. On the far right edge of the form, there's a vertical scroll bar.

Figure 8-9. Canal forecast report parameters (start date and end date).

Table 8-6. Canal forecast report, period 1 (January 1-15), 2001.

Canal Water Needs Forecast					
No.	Canal	Year	Period	Current	Expected
1	Abo Tahoон	2001	1	43470.00	40753.13
2	Berket Attas	2001	1	34664.00	32497.50
3	Besntway	2001	1	46130.00	43246.88
4	Elahkar	2001	1	5880.00	5512.50
5	Eldekhla	2001	1	59290.00	55584.38
6	Elgaradat	2001	1	18298.00	17154.38
7	Elhamamy	2001	1	53354.00	50019.38
8	Elherfa	2001	1	111426.00	104461.88
9	Elkamaheen	2001	1	68054.00	63800.63
10	Elkarawy	2001	1	25354.00	23769.38
11	Elkasida	2001	1	6860.00	6431.25
12	Elkenawia	2001	1	120484.00	112953.75
13	Elnakhla	2001	1	16674.00	15631.88
14	Elsharkawa	2001	1	25830.00	24215.63

Table 8-6. (Continued).

Canal Water Needs Forecast (Continued)					
No.	Canal	Year	Period	Current	Expected
15	Elwzara	2001	1	29960.00	28087.50
16	Elzarka	2001	1	50176.00	47040.00
17	Elzeny	2001	1	58646.00	54980.63
18	G Kabeel	2001	1	5320.00	4987.50
19	G sahaly	2001	1	15428.00	14463.75
20	Gnady	2001	1	21924.00	20553.75
21	Hamdy	2001	1	4270.00	4003.13
22	Kafla	2001	1	51926.00	48680.63
23	Khadra	2001	1	3360.00	3150.00
24	Koom Elbous	2001	1	32900.00	30843.75
25	Mahlt Keel	2001	1	58226.00	54586.88
26	Sahaly	2001	1	22428.00	21026.25
27	Seaf Aldeen	2001	1	7210.00	6759.38
28	Sidi Azab	2001	1	23660.00	22181.25
29	Zawet Naem	2001	1	24850.00	23296.88

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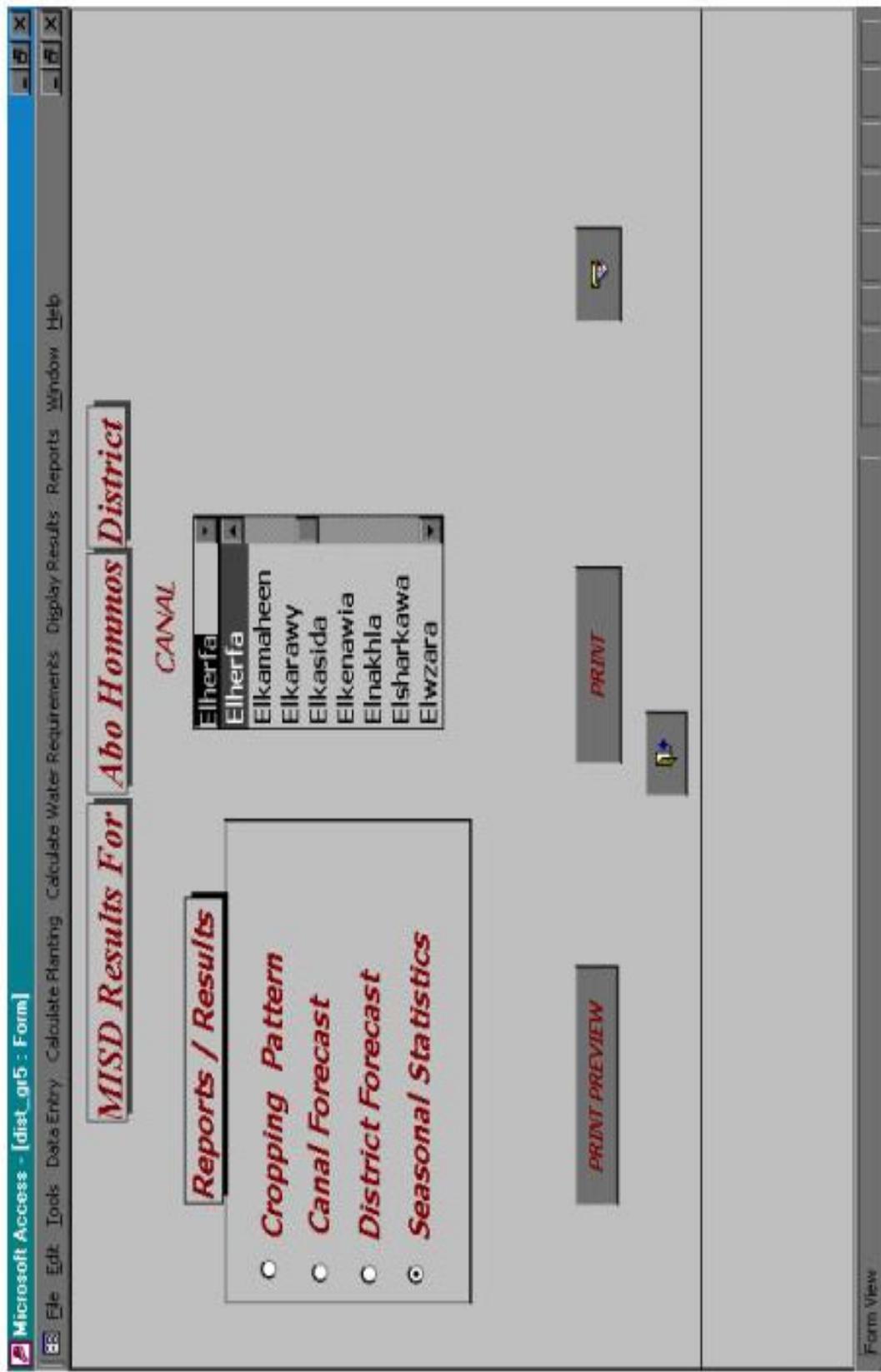


Figure 8-10. Seasonal statistics report parameters (canal name).

Table 8-7. Seasonal statistics report.

<i>Water Requirements Statistical Report</i>							
Canal	Per	Current			Expected		
		Average	Min	Max	Average	Min	Max
Elherfa	1	111426.00	111426.00	111426.00	104461.88	104461.88	104461.88
Elherfa	2	104461.88	104461.88	104461.88	104461.88	104461.88	104461.88
Elherfa	3	111466.38	111466.38	111466.38	111466.38	111466.38	111466.38
Elherfa	4	130585.90	130585.90	130585.90	130585.90	130585.90	130585.90
Elherfa	5	149739.24	149739.24	149739.24	149739.24	149739.24	149739.24
Elherfa	6	153340.83	153340.83	153340.83	154119.61	154119.61	154119.61
Elherfa	7	141345.21	141345.21	141345.21	145557.35	145557.35	145557.35
Elherfa	8	33827.17	33827.17	33827.17	29915.36	29915.36	29915.36
Elherfa	9	23810.72	23810.7	23810.72	45395.42	45395.42	45395.42
Elherfa	10	63160.25	63160.25	63160.25	58013.02	58013.02	58013.02
Elherfa	11	116117.09	116117.09	116117.09	78892.95	78892.95	78892.9529
Elherfa	12	261989.15	261989.15	261989.15	282525.99	282525.99	282525.99
Elherfa	13	349110.94	349110.94	349110.94	349110.94	349110.94	349110.94
Elherfa	14	481983.38	481983.38	481983.38	370153.24	370153.24	370153.24
Elherfa	15	0.00	0.00	0.00	0.00	0.00	0.00
Elherfa	20	59968.75	59968.75	59968.75	0.00	0.00	0.00
Elherfa	21	111426.00	111426.00	111426.00	55300.00	55300.00	55300.00
Elherfa	22	111426.00	111426.00	111426.00	111426.00	111426.00	111426.00
Elherfa	23	111426.00	111426.00	111426.00	111426.00	111426.00	111426.00
Elherfa	24	104461.88	104461.88	104461.88	104461.88	104461.88	104461.88

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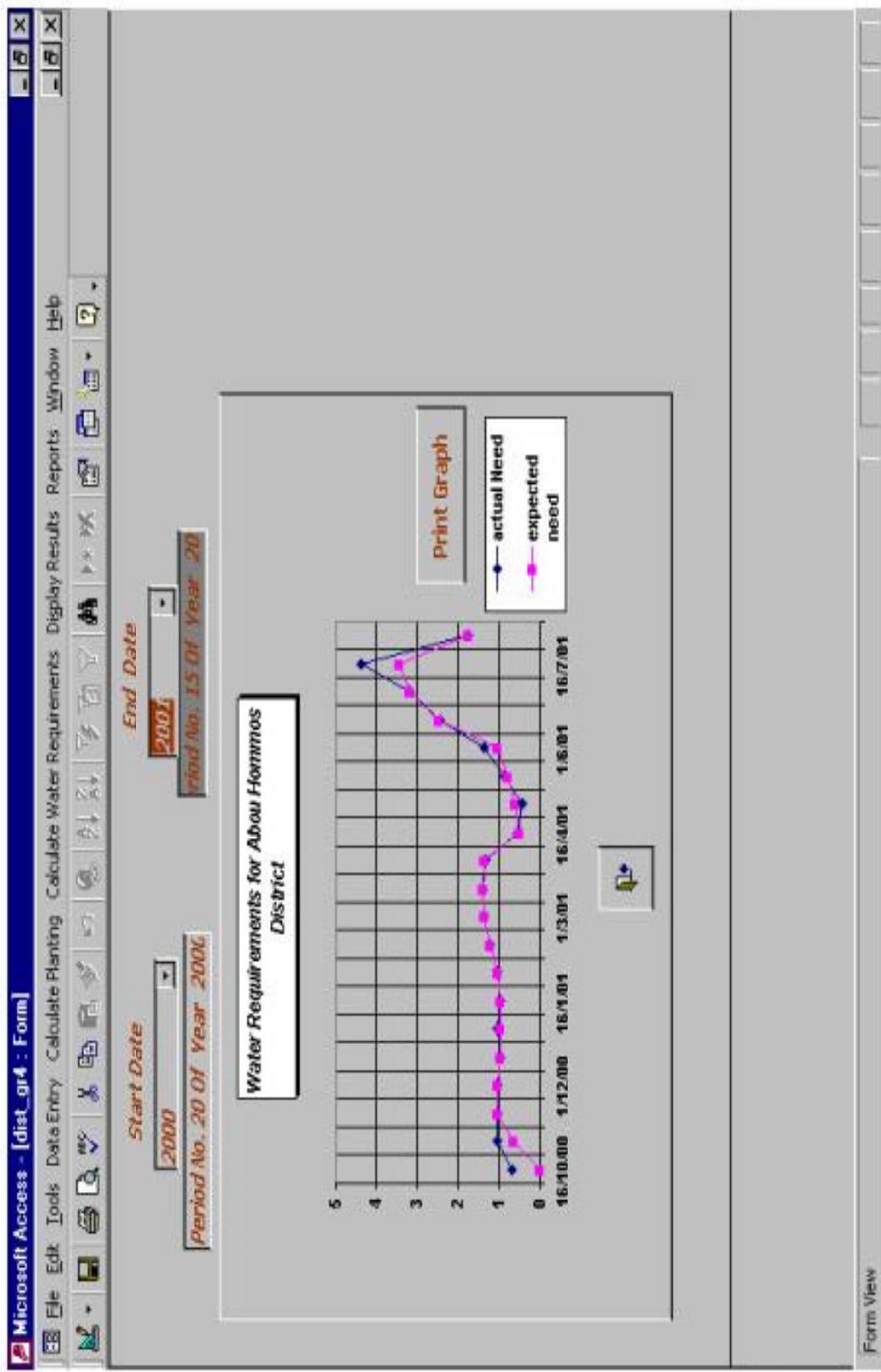


Figure 8-11. Comparison of actual and expected needs.

Table 8-8. Time series of current and expected crop water needs for the Abou Hummus Irrigation District.

<i>Abou Hummus District Forecast</i>				
Year	Period	Current Need	Next Period Expected Need (Million m³)	Expected Need (Million m³)
2000	20	0.69	0.66	0.00
2000	21	1.05	1.05	0.66
2000	22	1.05	1.05	1.05
2000	23	1.05	0.98	1.05
2000	24	0.98	0.98	0.98
2001	1	1.05	0.98	0.98
2001	2	0.98	1.05	0.98
2001	3	1.05	1.22	1.05
2001	4	1.22	1.34	1.22
2001	5	1.34	1.39	1.34
2001	6	1.39	1.37	1.39
2001	7	1.31	0.52	1.37
2001	8	0.54	0.62	0.52
2001	9	0.41	0.79	0.62
2001	10	0.84	1.03	0.79
2001	11	1.36	2.45	1.03
2001	12	2.42	3.20	2.45
2001	13	3.20	3.32	3.20
2001	14	4.36	3.48	3.32
2001	15	3.48	0.00	3.48

Tuesday, January 29, 2002

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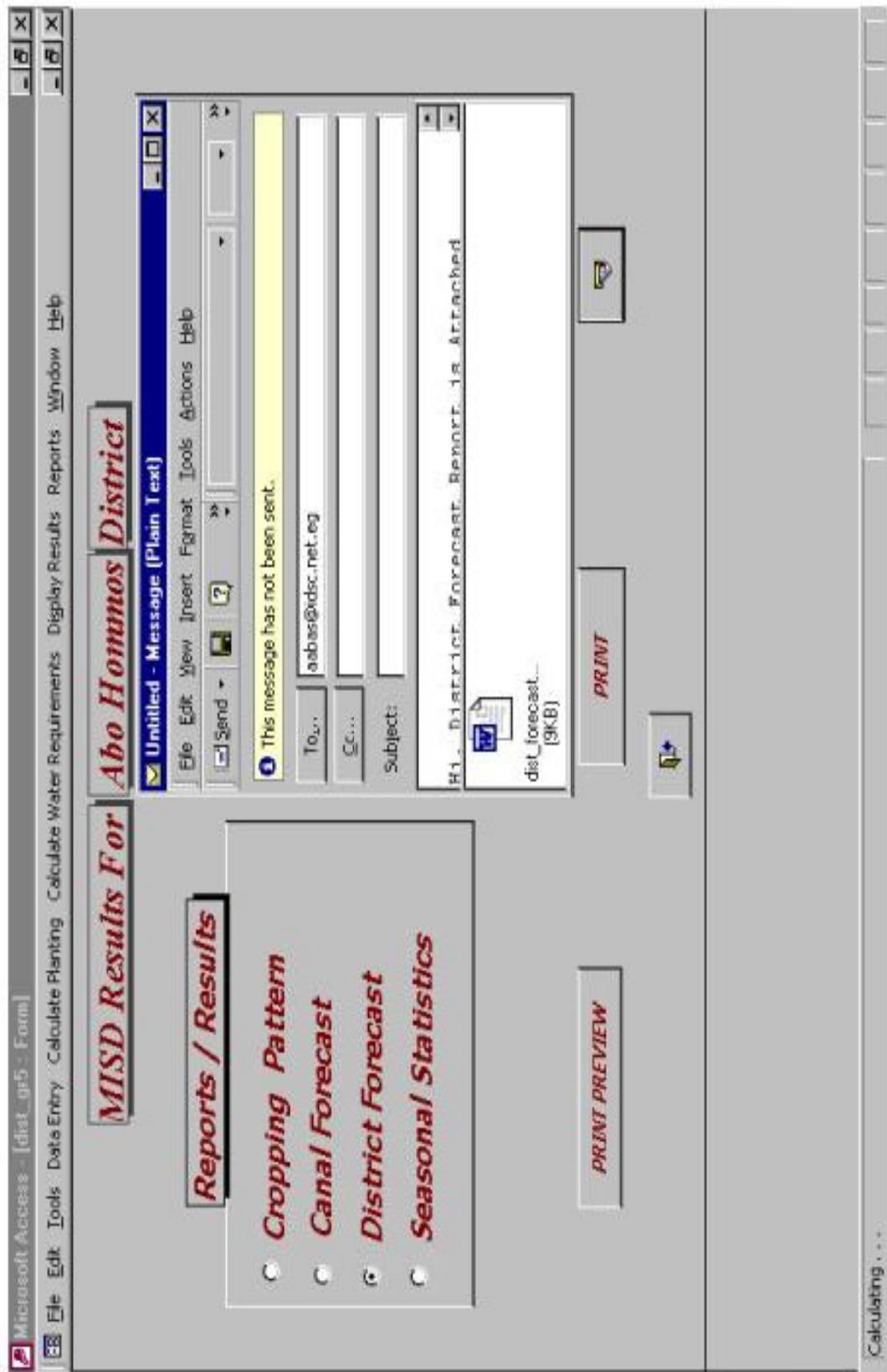


Figure 8-12. District to directorate data transfer example for sending district historic crop water needs.

9 Water-Monitoring Program

9.1 Introduction

The importance of water monitoring is to ensure that the district has the right quantity of water during a certain period. Also, it could be a helpful tool to determine the status of irrigation and hence the district engineer can make a decision of rescheduling the water distribution within the district. He can also ask his superiors to provide him with additional water in case of water shortage or reduce the incoming flow to avoid excess water problems.

9.2 Water Monitoring Program

A water-monitoring program was initiated on March 1, 2000, to estimate the water supplies to the irrigation district. This program will provide data for assessing the mismatch between irrigation demands and supplies on a district-wide basis. The main components of this program are:

9.2.1 Monitoring Locations

The first step in establishing the monitoring program was selection of key locations on the canal system to be monitored. These locations represent the sources from which the district gets its water allocation and the places where water leaves the district and is delivered to another neighboring district. Figure 9-1 shows a schematic of the canal system of the Luxor district with the monitoring locations.

9.2.2 Location of Measurements

The Luxor Irrigation District gets its water from two main sources, the Kallabia Canal and the Biadia pump station. The district water quota is diverted from branch canals along the reach from Heibel Regulator to Kobah Regulator. Therefore water flow is monitored at these points as shown in figure (9-1)

9.2.3 Parameters

The parameters to be monitored at each location were determined to be water levels (upstream and downstream of the location), gate opening and water flows.

9.2.4 Frequency of Measurement

The schedule was established for the district to measure water levels every two hours and measure the water flow using the current meter method at least once during the “on-period” of the canal.

9.2.5 Monitoring Tools

Assessment of the tools required for implementing the monitoring program indicated that automatic water level recorders (ARs) would be used to measure water levels where telemetry stations do not exist. Wherever possible, telemetry stations were used for these water level measurements. In addition, the gatekeepers take readings every two hours during

the daytime. In minor locations, *i.e.*, small canals feeding the district, the gatekeepers were assigned to report their water levels instead of using ARs or telemetry.

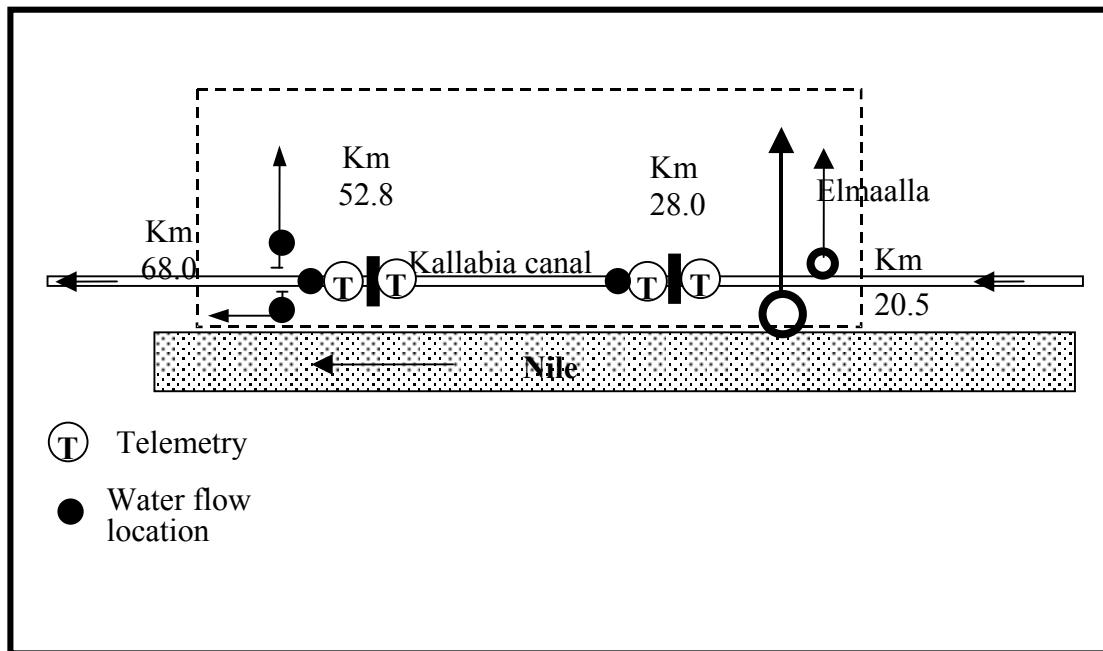


Figure 9-1. Locations of MISD water monitoring in Luxor District.

9.2.6 Calibration

Calibration work involves determination of the appropriate hydraulic equations to be used for calculating the water inflow to the district from the water level measurements. Calibration depends on the current meter flow measurements. Two hydraulic equations are recommended because they are very common in the Egyptian water management system. The first equation is stage-discharge relation and can be written as:

$$Q = a h^b$$

where Q is the canal discharge, h is the water level downstream the canal headgate, and a and b are calibration constants. In many cases, a linear form of the stage-discharge equation is used as follows:

$$Q = a + b (h)$$

The second equation is the orifice flow equation that can be written as:

$$Q = C_d A \sqrt{2gH}$$

where A is gate opening area, H is the water head difference across the gate, g is the acceleration of gravity, and C_d is the calibration coefficient. A linearized form of the orifice equation is commonly used at MWRI. This form is:

$$\frac{Q}{\sqrt{H}} = C(d_0 \pm L)$$

where d_0 is the gate opening depth and C and L are calibration constants chosen to give the highest correlation coefficient between the two variables Q/\sqrt{H} and d_0 .

Data of flow measurements are shown in Table 9-1. Figure 9-2 shows the calibrated equations for the inflow points on Kallabia canal (Kobah Regulator) and the outflow point downstream Elhebeil regulator.

9.2.7 Calculating Flow from Water Levels

Once the calibration equations are developed, they can be used to calculate water flow rate (discharge) from the water level data. Thus, the two-hour and daily water inflow and outflow were calculated in order to estimate the actual water delivered to the irrigation district. Tables 9-2 and 9-3 show water flow estimated at the previously mentioned monitoring locations.

Table 9-1. Current meter flow measurements in the Luxor Irrigation District.

New klabia Canal		(Kobah C .R.)	
Date	U.S.	D.S	Dis.(m ³ /sec)
11/11/99	76.4	76.06	51.929
11/25/99	76.4	75.9	29.71
12/08/99	76.4	75.83	46.504
12/16/99	76.4	75.2	29.425
01/16/00	75.95	75.9	40.985
01/29/00	76.4	75.6	22.5
02/06/00	76.4	75.7	37.344
02/17/00	76.4	75.75	40.066
02/21/00	76.4	75.68	25.652
03/06/00	76.40	75.70	42.02
03/12/00	76.40	75.70	31.25
03/22/01	76.46	75.80	28.94
04/08/00	76.50	75.80	41.08
04/27/00	76.50	75.95	33.68
06/27/00	76.50	76.15	54.00
07/10/00	76.50	76.15	43.78
08/23/00	76.55	76.10	37.13
09/12/00	76.55	76.15	48.82
09/20/00	76.55	76.18	39.59
10/03/00	76.50	76.25	55.32
10/23/00	76.60	76.10	33.38

New Klabia Canal		(Hebeil C .R .)	
Date	U . S .	D . S	Dis .(m ³ / sec)
11 / 11 / 99	75 .55	74 .62	35 .138
11 / 25 / 99	75 .65	74 .4	27 .037
12 / 08 / 99	75 .55	74 .36	25 .763
12 / 13 / 99	75 .55	74 .45	35 .55
01 / 26 / 01	75 .55	74 .3	29 .805
01 / 16 / 01	75 .55	74 .58	34 .04
02 / 06 / 01	75 .55	74 .2	24 .147
02 / 17 / 01	75 .55	74 .15	19 .736
02 / 21 / 01	75 .55	74 .2	22 .957
03 / 06 / 00	75 .55	73 .40	19 .249
03 / 12 / 01	75 .55	74 .30	18 .895
03 / 22 / 01	75 .60	74 .40	21 .410
04 / 08 / 01	75 .60	74 .45	24 .655
04 / 27 / 00	75 .55	74 .45	31 .390
06 / 27 / 00	75 .60	74 .70	35 .631
07 / 10 / 01	75 .60	74 .68	27 .701
08 / 24 / 00	75 .50	74 .55	32 .630
09 / 12 / 00	75 .55	74 .65	34 .422
09 / 18 / 01	75 .55	74 .65	37 .580
10 / 03 / 01	75 .55	74 .80	44 .103
10 / 23 / 01	75 .55	74 .70	40 .490

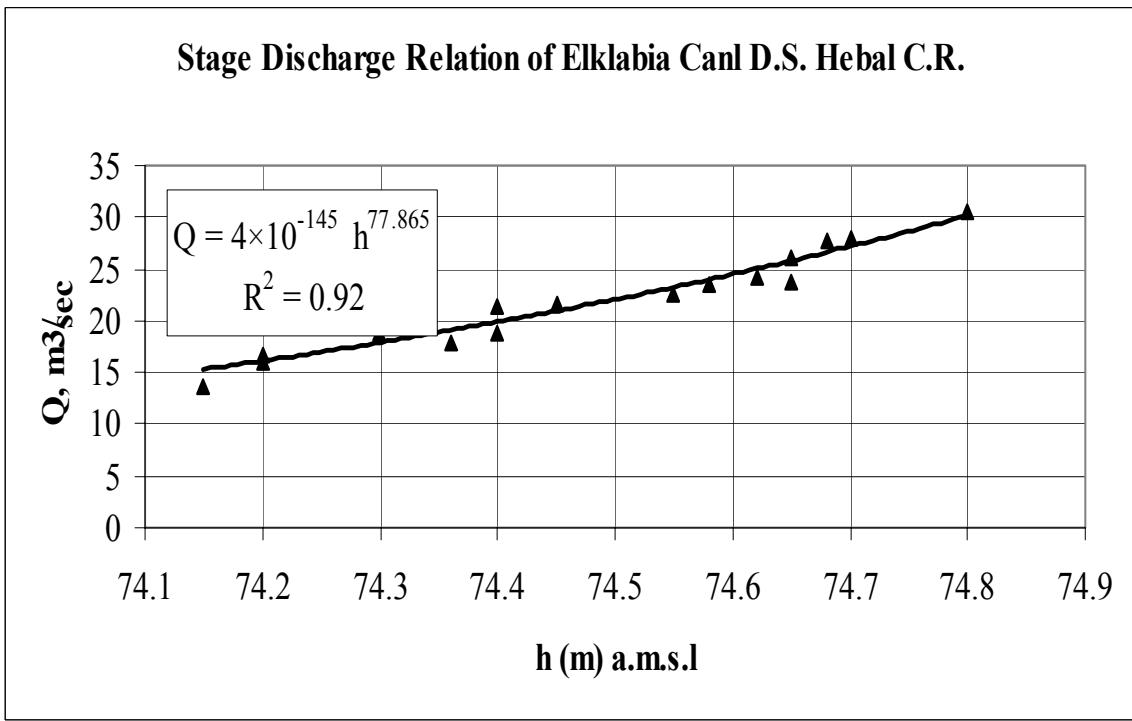
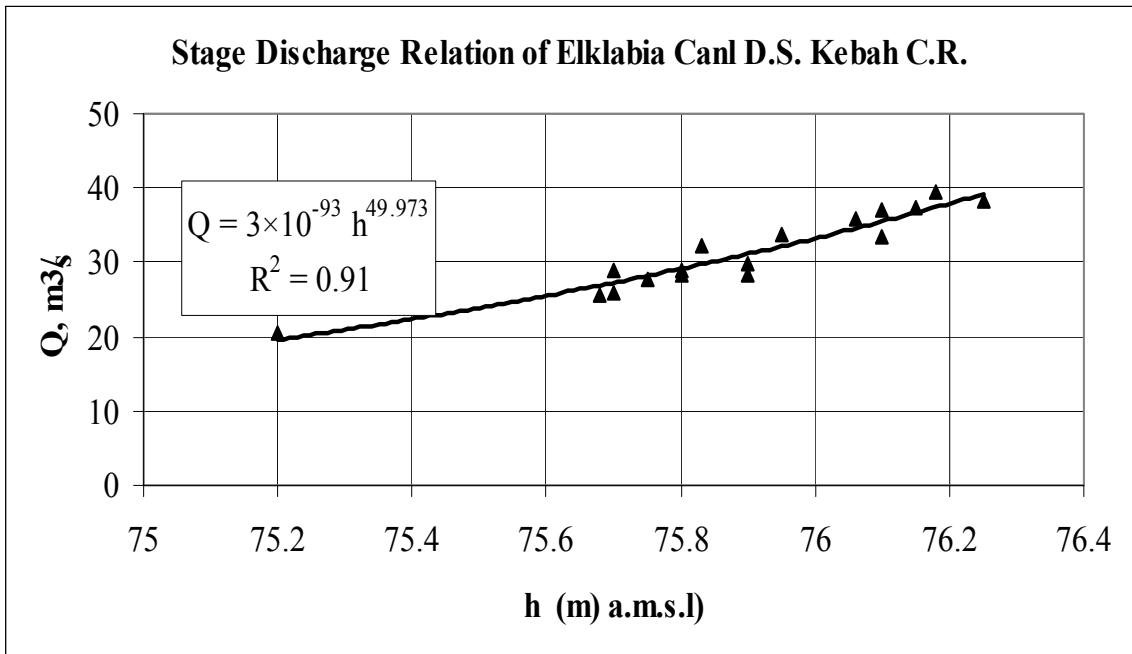


Figure 9-1. Stage-discharge relationships using water level downstream of two cross regulators on the El Kallabia Canal.

Table 9-2. Two-hour water levels and discharges of Kallabia Canal at Hebeil Regulator.

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	total
03/01/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	1.856
03/02/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	1.856
03/03/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	1.856
03/04/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	1.856
03/05/00	U.S	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	1.856
03/06/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	1.856
03/07/00	U.S	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	
	D.S	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	
	Discharge	0.139	0.139	0.139	0.139	0.139	0.139	0.139	0.139	0.139	0.139	0.139	0.139	1.672
03/08/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	
	D.S	74	74	74	74	74	74	74	74	74	74	74	74	
	Discharge	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	0.102	1.220
03/09/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	
	D.S	74	74	74	74	74	74	74	74	74	74	74	74	
	Discharge	0.104	0.104	0.104	0.104	0.104	0.104	0.104	0.104	0.104	0.104	0.104	0.104	1.246
03/10/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	
	D.S	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	
	Discharge	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	1.505
03/11/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	
	D.S	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	
	Discharge	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	0.128	1.537
03/12/00	U.S	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	0.147	1.761
03/13/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	
	D.S	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	
	Discharge	0.145	0.145	0.145	0.145	0.145	0.145	0.145	0.145	0.145	0.145	0.145	0.145	1.743
03/14/00	U.S	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165	1.976
03/15/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	
	D.S	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	
	Discharge	0.139	0.139	0.139	0.139	0.139	0.139	0.139	0.139	0.139	0.139	0.139	0.139	1.672
03/16/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	
	D.S	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	
	Discharge	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	1.707
03/17/00	U.S	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	
	D.S	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	
	Discharge	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	0.142	1.707

Table 9-2. (Continued).

Table 9-2. (Continued).

Table 9-2. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	total
04/23/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.091
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.174	0.174	0.174	0.174	0.174	0.174	0.174	0.175	0.175	0.175	0.175	0.175	
04/24/00	U.S	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	1.861
	D.S	74.5	74.5	74.5	74.5	74.5	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.163	0.163	0.163	0.163	0.163	0.156	0.148	0.148	0.148	0.148	0.148	0.148	
04/25/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.895
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.158	0.158	0.158	0.158	0.158	0.158	0.158	0.158	0.158	0.158	0.158	0.158	
04/26/00	U.S	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	1.907
	D.S	74.5	74.5	74.5	74.5	74.5	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.163	0.163	0.163	0.163	0.163	0.155	0.156	0.156	0.156	0.156	0.156	0.156	
04/27/00	U.S	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	2.149
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.179	0.179	0.179	0.179	0.179	0.179	0.179	0.179	0.179	0.179	0.179	0.179	
04/28/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.976
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165	0.165	
04/29/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.856
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
04/30/00	U.S	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	1.856
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
05/01/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.061
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
05/02/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.905
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.160	0.160	0.160	0.160	0.160	0.158	0.160	0.158	0.158	0.158	0.158	0.158	
05/03/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.907
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.158	0.158	0.158	0.158	0.158	0.158	0.158	0.161	0.161	0.160	0.160	0.160	
05/04/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	75.5	75.5	2.139
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.177	0.177	0.177	0.177	0.177	0.179	0.179	0.179	0.179	0.179	0.179	0.179	
05/05/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.061
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
05/07/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.061
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
05/08/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.648
	D.S	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.2	74.2	74.2	74.2	74.2	
	Discharge	0.145	0.145	0.145	0.145	0.145	0.145	0.141	0.134	0.129	0.129	0.129	0.129	
05/09/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.765
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.3	74.3	74.3	74.3	74.3	
	Discharge	0.158	0.158	0.158	0.158	0.158	0.148	0.138	0.138	0.138	0.138	0.138	0.138	
05/10/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.125
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.183	0.183	0.183	0.183	0.183	0.181	0.172	0.172	0.172	0.172	0.172	0.172	

Table 9-2. (Continued).

Table 9-2. (Continued).

Table 9-2. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	total
06/16/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.539
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	
06/17/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.532
	D.S	74.6	74.6	74.6	74.6	74.6	74.8	74.8	74.8	74.8	74.8	74.8	74.8	
	Discharge	0.191	0.191	0.191	0.191	0.191	0.230	0.223	0.225	0.225	0.225	0.225	0.225	
06/18/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.382
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.212	0.212	0.212	0.212	0.212	0.212	0.189	0.185	0.185	0.185	0.185	0.185	
06/19/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.612
	D.S	74.8	74.8	74.8	74.8	74.8	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.230	0.230	0.230	0.230	0.230	0.216	0.209	0.207	0.207	0.207	0.207	0.207	
06/20/00	U.S	75.7	75.7	75.7	75.7	75.7	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.539
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	
06/21/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.539
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	
06/22/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.539
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	
06/23/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.539
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	
06/24/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.611
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.214	0.214	0.214	0.214	0.214	0.218	0.221	0.221	0.221	0.221	0.221	0.221	
06/25/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.539
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	
06/26/00	U.S	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	2.352
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.193	0.193	0.193	0.193	0.193	0.197	0.199	0.199	0.199	0.199	0.199	0.199	
06/27/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.675
	D.S	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	
	Discharge	0.223	0.223	0.223	0.223	0.223	0.223	0.223	0.223	0.223	0.223	0.223	0.223	
06/28/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.703
	D.S	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.235	0.235	0.235	0.235	0.235	0.235	0.230	0.218	0.216	0.216	0.216	0.216	
06/29/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.734
	D.S	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	
	Discharge	0.235	0.235	0.235	0.235	0.235	0.223	0.223	0.223	0.223	0.223	0.223	0.223	
06/30/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.675
	D.S	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	
	Discharge	0.223	0.223	0.223	0.223	0.223	0.223	0.223	0.223	0.223	0.223	0.223	0.223	
07/01/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.744
	D.S	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	
	Discharge	0.232	0.232	0.232	0.232	0.232	0.232	0.232	0.235	0.223	0.223	0.223	0.223	
07/02/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.435
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.203	0.203	0.203	0.203	0.203	0.203	0.203	0.203	0.203	0.203	0.203	0.203	
07/03/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.367
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.8	74.8	74.7	74.7	74.7	74.7	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.225	0.225	0.212	0.212	0.212	0.212	0.212	

Table 9-2. (Continued).

Table 9-2. (Continued).

Table 9-2. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	total
08/09/00	U.S	75.6	75.6	75.6	75.6	75.7	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.249
	D.S	74.5	74.6	74.6	74.6	74.6	74.7	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.177	0.181	0.181	0.183	0.183	0.201	0.193	0.193	0.191	0.189	0.189	0.191	
08/10/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.226
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.5	74.5	74.5	
	Discharge	0.191	0.191	0.193	0.191	0.193	0.191	0.189	0.183	0.183	0.172	0.177	0.175	
08/11/00	U.S	75.6	75.6	75.7	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.140
	D.S	74.5	74.5	74.5	74.5	74.6	74.6	74.6	74.5	74.5	74.4	74.5	74.5	
	Discharge	0.174	0.179	0.175	0.191	0.193	0.197	0.191	0.177	0.172	0.160	0.165	0.168	
08/12/00	U.S	75.6	75.7	75.7	75.7	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.060
	D.S	74.5	74.5	74.5	74.5	74.6	74.6	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.166	0.166	0.166	0.177	0.185	0.175	0.170	0.172	0.172	0.170	0.170	0.170	
08/13/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	75.5	75.5	2.118
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.6	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.174	0.174	0.174	0.177	0.174	0.174	0.187	0.179	0.177	0.179	0.179	
08/14/00	U.S	75.6	75.6	75.6	75.6	75.5	75.6	75.6	75.6	75.6	75.6	75.5	75.5	2.063
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.174	
08/15/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	2.063
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.174	0.174	0.174	0.174	0.174	0.174	0.174	0.170	0.170	0.170	0.170	0.170	
08/16/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	2.129
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.6	74.6	74.5	74.5	74.5	
	Discharge	0.174	0.174	0.174	0.174	0.174	0.174	0.174	0.185	0.185	0.185	0.179	0.177	
08/17/00	U.S	75.6	75.6	75.6	75.6	75.6	75.5	75.6	75.6	75.6	75.6	75.6	75.6	2.175
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.179	0.179	0.179	0.179	0.179	0.179	0.183	0.183	0.183	0.183	0.183	0.183	
08/18/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.171
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	
08/19/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.171
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	
08/20/00	U.S	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	2.171
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	
08/21/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.171
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	
08/22/00	U.S	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	2.240
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187	0.187	
08/23/00	U.S	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	2.171
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	
08/24/00	U.S	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	2.171
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	
08/25/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.171
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	
08/26/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.171
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	

Table 9-2. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	total
08/27/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.171
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	
08/28/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.171
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	
08/29/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	2.227
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.5	74.5	74.6	74.6	74.6	
	Discharge	0.189	0.189	0.189	0.189	0.189	0.189	0.185	0.175	0.175	0.187	0.187	0.187	
08/30/00	U.S	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.6	75.6	75.5	75.5	75.6	2.171
	D.S	74.6	74.6	74.6	74.6	74.6	74.5	74.5	74.6	74.5	74.5	74.5	74.5	
	Discharge	0.189	0.189	0.187	0.189	0.183	0.179	0.175	0.181	0.179	0.174	0.174	0.174	
08/31/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	2.207
	D.S	74.5	74.5	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.5	74.5	74.5	
	Discharge	0.179	0.179	0.181	0.181	0.191	0.195	0.197	0.183	0.183	0.179	0.181	0.179	
09/01/00	U.S	75.5	75.5	75.5	75.6	75.6	5.55	75.6	75.6	75.6	75.6	75.6	75.6	2.171
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	
09/02/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.288
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	
09/03/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	74.6	75.5	75.5	2.171
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	
09/04/00	U.S	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	2.189
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.5	74.5	74.5	74.5	74.5	74.6	
	Discharge	0.193	0.191	0.193	0.193	0.187	0.183	0.179	0.179	0.172	0.170	0.170	0.181	
09/05/00	U.S	75.5	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.410
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	
09/06/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	2.288
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	
09/07/00	U.S	75.5	75.5	75.5	75.5	75.6	75.6	75.5	75.5	75.5	75.6	75.6	75.6	2.539
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	
09/08/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.675
	D.S	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	
	Discharge	0.223	0.223	0.223	0.223	0.223	0.223	0.223	0.223	0.223	0.223	0.223	0.223	
09/09/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.539
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	
09/10/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.539
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	
09/11/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.410
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	
09/12/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	2.391
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.199	0.199	0.199	0.199	0.195	
09/13/00	U.S	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.480
	D.S	74.6	74.6	74.6	74.6	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.195	0.195	0.197	0.195	0.205	0.214	0.216	0.216	0.214	0.212	0.212	0.212	

Table 9-2. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	total
09/14/00	U.S	75.5	75.5	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	2.555
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.212	0.216	0.216	0.218	0.216	0.207	0.205	0.207	0.216	0.216	0.214	0.212	
09/15/00	U.S	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	2.562
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.212	0.209	0.212	0.212	0.212	0.212	0.212	0.212	0.216	0.218	0.218	0.218	
09/16/00	U.S	75.5	75.5	75.5	75.5	75.5	75.5	75.6	75.6	75.6	75.5	75.5	75.5	2.582
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.218	0.221	0.221	0.221	0.221	0.221	0.207	0.201	0.212	0.216	0.214	0.212	
09/17/00	U.S	75.5	75.5	75.5	75.5	75.5	75.5	75.6	75.6	75.6	75.6	75.5	75.5	2.516
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.6	
	Discharge	0.212	0.212	0.214	0.214	0.214	0.214	0.212	0.214	0.212	0.203	0.201	0.197	
09/18/00	U.S	75.5	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	75.5	2.328
	D.S	74.6	74.6	74.6	74.6	74.6	74.7	74.7	74.7	74.7	74.6	74.6	74.6	
	Discharge	0.197	0.185	0.181	0.181	0.199	0.203	0.203	0.201	0.201	0.195	0.193	0.191	
09/19/00	U.S	75.5	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	2.363
	D.S	74.6	74.6	74.6	74.7	74.7	74.7	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.189	0.191	0.191	0.201	0.203	0.201	0.199	0.199	0.199	0.197	0.197	0.199	
09/20/00	U.S	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	2.416
	D.S	74.6	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.199	0.201	0.201	0.205	0.203	0.203	0.201	0.201	0.201	0.201	0.201	0.201	
09/21/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.396
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.212	0.212	0.212	0.212	0.212	0.205	0.203	0.189	0.183	0.181	0.183	0.195	
09/22/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	2.405
	D.S	74.6	74.7	74.7	74.7	74.7	74.7	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.199	0.201	0.201	0.203	0.221	0.203	0.197	0.195	0.197	0.199	0.197	0.195	
09/23/00	U.S	75.5	75.5	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.411
	D.S	74.6	74.6	74.6	74.7	74.7	74.7	74.7	74.7	74.7	74.6	74.6	74.6	
	Discharge	0.193	0.195	0.197	0.205	0.209	0.207	0.205	0.203	0.201	0.199	0.199	0.199	
09/24/00	U.S	75.5	75.5	75.5	75.5	74.5	74.5	75.6	75.6	75.6	75.6	75.6	75.6	2.235
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.185	0.185	0.185	0.187	0.187	0.187	0.187	0.185	0.187	0.187	0.187	0.189	
09/25/00	U.S	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	2.288
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	
09/26/00	U.S	75.5	75.5	75.5	75.5	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.288
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	
09/27/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.410
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	
09/28/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	2.369
	D.S	74.6	74.6	74.7	74.7	74.7	74.7	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.195	0.199	0.201	0.205	0.205	0.197	0.195	0.195	0.195	0.195	0.195	0.195	
09/29/00	U.S	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.6	75.6	75.6	75.6	2.539
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	

Table 9-2. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	total
09/30/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.385
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.199	0.199	0.199	0.199	0.199	0.199	0.199	0.199	0.199	0.199	0.199	0.199	
10/01/00	U.S	75.6	75.6	76.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	2.288
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	
10/02/00	U.S	75.5	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.419
	D.S	74.6	74.6	74.6	74.6	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.193	0.195	0.197	0.199	0.209	0.209	0.201	0.205	0.201	0.203	0.205	0.203	
10/03/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	76.6	75.6	75.6	75.6	75.6	2.435
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.203	0.203	0.203	0.203	0.203	0.203	0.203	0.203	0.203	0.203	0.203	0.203	
10/04/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.620
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.218	0.218	0.218	0.218	0.218	0.218	0.218	0.218	0.218	0.218	0.218	0.218	
10/05/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.539
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	
10/06/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	2.566
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	0.214	
10/07/00	U.S	75.5	75.5	75.5	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.6	75.6	2.487
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.207	0.207	0.207	0.207	0.207	0.207	0.207	0.207	0.207	0.207	0.207	0.207	
10/08/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.572
	D.S	74.7	74.7	74.7	74.7	74.8	74.8	74.8	74.7	74.7	74.7	74.6	74.6	
	Discharge	0.218	0.221	0.223	0.225	0.225	0.216	0.216	0.218	0.221	0.203	0.195	0.191	
10/09/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.453
	D.S	74.6	74.6	74.6	74.6	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.193	0.197	0.199	0.201	0.209	0.209	0.209	0.207	0.207	0.207	0.207	0.207	
10/10/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.517
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.207	0.209	0.209	0.209	0.209	0.212	0.209	0.209	0.207	0.207	0.214	0.214	
10/11/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	2.620
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.218	0.218	0.218	0.218	0.218	0.218	0.218	0.218	0.218	0.218	0.218	0.218	
10/12/00	U.S	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	2.546
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.216	0.216	0.216	0.218	0.218	0.214	0.209	0.207	0.209	0.207	0.207	0.207	
10/13/00	U.S	75.5	75.5	75.5	75.6	75.5	75.5	75.6	75.6	75.6	75.6	75.6	75.5	2.533
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.207	0.207	0.207	0.209	0.216	0.214	0.214	0.214	0.212	0.212	0.209	0.212	
10/14/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.6	75.6	2.563
	D.S	74.7	74.7	74.7	74.7	74.7	74.8	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.216	0.218	0.218	0.221	0.223	0.221	0.221	0.218	0.212	0.212	0.201	0.203	
10/15/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	75.5	75.6	2.405
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.6	74.6	74.6	74.7	
	Discharge	0.203	0.203	0.205	0.203	0.203	0.203	0.203	0.201	0.199	0.193	0.189	0.205	
10/16/00	U.S	75.6	75.6	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	2.487
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.207	0.207	0.207	0.207	0.207	0.207	0.207	0.207	0.207	0.207	0.207	0.207	
10/17/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.6	2.709
	D.S	74.7	74.7	74.7	74.7	74.7	74.8	74.8	74.8	74.8	74.8	74.8	74.8	
	Discharge	0.218	0.216	0.216	0.218	0.225	0.235	0.232	0.230	0.230	0.230	0.228	0.230	

Table 9-2. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	total
10/18/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	2.855
	D.S	74.8	74.8	74.8	74.8	74.8	74.9	74.9	74.8	74.8	74.8	74.8	74.8	
	Discharge	0.230	0.232	0.232	0.235	0.242	0.247	0.247	0.240	0.237	0.237	0.237	0.237	
10/19/00	U.S	75.5	75.5	75.5	75.5	75.5	75.6	75.6	75.6	75.5	75.5	75.6	75.6	2.741
	D.S	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.7	74.7	74.7	
	Discharge	0.237	0.237	0.237	0.245	0.245	0.235	0.228	0.225	0.228	0.214	0.207	0.203	
10/20/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	75.6	2.505
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.5	74.6	
	Discharge	0.205	0.212	0.216	0.218	0.221	0.216	0.214	0.214	0.214	0.214	0.172	0.191	
10/21/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	75.6	2.533
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.203	0.205	0.207	0.207	0.221	0.221	0.218	0.214	0.209	0.209	0.209	0.209	
10/22/00	U.S	75.6	75.6	75.6	75.6	75.6	75.5	75.6	75.6	75.5	75.5	75.6	75.6	2.524
	D.S	74.7	74.7	74.7	74.7	74.8	74.8	74.7	74.7	74.7	74.7	74.6	74.5	
	Discharge	0.212	0.214	0.216	0.221	0.237	0.235	0.218	0.212	0.209	0.195	0.179	0.177	
10/23/00	U.S	75.6	76.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	2.460
	D.S	74.6	74.6	74.7	74.7	74.7	74.7	74.7	74.6	74.7	74.7	74.7	74.7	
	Discharge	0.181	0.199	0.205	0.216	0.221	0.201	0.195	0.205	0.209	0.212	0.209	0.207	
10/24/00	U.S	75.5	75.5	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.392
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.205	0.205	0.205	0.207	0.207	0.201	0.195	0.193	0.193	0.193	0.195	0.195	
10/25/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	75.5	75.5	75.6	2.514
	D.S	74.6	74.6	74.7	74.7	74.8	74.8	74.8	74.7	74.7	74.7	74.7	74.6	
	Discharge	0.197	0.199	0.201	0.201	0.223	0.225	0.223	0.221	0.214	0.212	0.201	0.199	
10/26/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	2.360
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.197	0.197	0.197	0.197	0.197	0.197	0.197	0.197	0.197	0.197	0.197	0.197	
10/27/00	U.S	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.6	75.6	75.6	75.6	75.6	2.539
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	
10/28/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	2.539
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	
10/29/00	U.S	75.5	75.5	75.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	2.596
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.221	0.212	0.207	0.207	0.214	0.218	0.221	0.221	0.221	0.221	0.218	0.216	
10/30/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.549
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.216	0.218	0.218	0.218	0.221	0.216	0.214	0.212	0.212	0.203	0.201	0.201	
10/31/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.549
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.216	0.218	0.218	0.218	0.221	0.216	0.214	0.212	0.212	0.203	0.201	0.201	
11/01/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.675
	D.S	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	
	Discharge	0.223	0.223	0.223	0.223	0.223	0.223	0.223	0.223	0.223	0.223	0.223	0.223	
11/02/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.7	75.6	75.6	75.6	75.6	75.6	2.563
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.8	
	Discharge	0.207	0.207	0.207	0.205	0.205	0.207	0.207	0.218	0.223	0.225	0.228	0.223	
11/03/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.595
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.218	0.216	0.214	0.216	0.216	0.216	0.216	0.216	0.218	0.218	0.212	0.218	
11/04/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.541
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.214	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	

Table 9-2. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	total
11/05/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.7	75.6	75.6	75.6	75.6	75.6	2.407
	D.S	74.7	74.7	74.7	74.6	74.6	74.6	74.6	74.6	74.7	74.7	74.7	74.7	
	Discharge	0.209	0.209	0.209	0.199	0.187	0.185	0.185	0.193	0.205	0.207	0.209	0.209	
11/06/00	U.S	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	2.392
	D.S	74.7	74.7	74.6	74.7	74.6	74.6	74.6	74.7	74.7	74.7	74.7	74.6	
	Discharge	0.205	0.203	0.191	0.203	0.197	0.195	0.187	0.201	0.205	0.207	0.203	0.197	
11/07/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	75.5	75.5	75.5	2.438
	D.S	74.6	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.197	0.201	0.205	0.207	0.207	0.205	0.205	0.203	0.203	0.203	0.201	0.201	
11/08/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	2.398
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.201	0.201	0.201	0.201	0.201	0.201	0.199	0.199	0.199	0.199	0.199	0.199	
11/09/00	U.S	75.5	75.5	75.5	75.5	75.6	75.6	75.6	75.6	75.5	75.5	75.5	75.5	2.375
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.7	74.7	74.6	74.6	74.6	74.6	
	Discharge	0.197	0.197	0.195	0.195	0.199	0.201	0.203	0.201	0.199	0.197	0.197	0.197	
11/10/00	U.S	75.5	75.5	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.391
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.197	0.197	0.197	0.197	0.199	0.201	0.201	0.201	0.201	0.201	0.201	0.201	
11/11/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	75.5	2.440
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.7	74.7	74.7	74.7	74.7	74.7	
	Discharge	0.199	0.199	0.197	0.199	0.199	0.209	0.209	0.209	0.207	0.205	0.205	0.203	
11/12/00	U.S	75.5	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	75.5	75.5	75.5	2.209
	D.S	74.6	74.6	74.5	74.5	74.7	74.6	74.6	74.6	74.5	74.5	74.5	74.5	
	Discharge	0.187	0.181	0.175	0.179	0.203	0.199	0.197	0.195	0.175	0.175	0.175	0.172	
11/13/00	U.S	75.5	75.5	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.920
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.174	0.174	0.000	0.175	0.175	0.175	0.174	0.175	0.175	0.175	0.174	
11/14/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	75.5	75.5	2.238
	D.S	74.5	74.5	74.5	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.175	0.179	0.179	0.185	0.185	0.193	0.197	0.197	0.195	0.187	0.185	0.183	
11/15/00	U.S	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.6	75.6	75.6	75.6	75.6	2.159
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.5	74.5	74.5	74.5	74.6	74.6	
	Discharge	0.183	0.185	0.183	0.183	0.185	0.179	0.172	0.172	0.177	0.179	0.181	0.181	
11/16/00	U.S	75.6	75.6	75.6	75.6	75.5	75.5	75.5	75.6	75.6	75.5	75.5	75.5	2.292
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.181	0.181	0.189	0.193	0.197	0.193	0.189	0.197	0.197	0.193	0.193	0.193	
11/17/00	U.S	75.5	75.5	75.5	75.6	75.6	75.6	75.5	75.5	75.6	75.6	75.6	75.6	2.282
	D.S	74.6	74.6	74.7	74.7	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.197	0.199	0.201	0.203	0.199	0.193	0.185	0.181	0.181	0.181	0.181	0.183	
11/18/00	U.S	75.6	75.6	75.7	75.6	75.6	75.6	75.6	75.5	75.6	75.6	75.5	75.5	2.406
	D.S	74.6	74.6	74.6	74.6	74.7	74.7	74.7	74.7	74.7	74.6	74.6	74.6	
	Discharge	0.185	0.187	0.189	0.191	0.214	0.218	0.216	0.216	0.205	0.197	0.195	0.195	
11/19/00	U.S	75.5	75.5	75.5	75.5	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	2.082
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.5	74.5	
	Discharge	0.193	0.193	0.193	0.195	0.185	0.189	0.193	0.195	0.008	0.185	0.179	0.177	
11/20/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.519
	D.S	74.5	74.5	74.5	74.5	75.5	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.177	0.179	0.179	0.505	0.185	0.185	0.185	0.185	0.185	0.185	0.185	0.185	
11/21/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.519
	D.S	74.5	74.5	74.5	74.5	75.5	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.177	0.179	0.179	0.505	0.185	0.185	0.185	0.185	0.185	0.185	0.185	0.185	
11/22/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	75.5	75.5	75.5	2.166
	D.S	74.5	74.5	74.5	74.5	74.6	74.6	74.6	74.6	74.5	74.5	74.5	74.5	
	Discharge	0.174	0.172	0.170	0.175	0.191	0.197	0.189	0.183	0.179	0.179	0.179	0.179	

Table 9-2. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	total
11/23/00	U.S	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	75.5	75.5	2.201
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.183	0.185	0.185	0.187	0.185	0.185	0.183	0.183	0.183	0.182	0.181	0.181	
11/24/00	U.S	75.5	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.240
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.181	0.181	0.181	0.181	0.183	0.183	0.183	0.187	0.195	0.195	0.195	0.197	
11/25/00	U.S	75.6	75.6	75.6	75.6	75.5	75.5	75.5	75.5	75.5	75.5	75.6	75.6	2.368
	D.S	74.6	74.6	74.6	74.6	74.7	74.7	74.7	74.7	74.6	74.6	74.6	74.6	
	Discharge	0.197	0.199	0.199	0.199	0.209	0.207	0.205	0.201	0.193	0.185	0.187	0.189	
11/26/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	75.5	75.5	2.149
	D.S	74.6	74.6	4.62	74.6	74.7	74.7	74.7	74.7	74.6	74.6	74.6	74.6	
	Discharge	0.191	0.193	0.000	0.199	0.205	0.205	0.205	0.203	0.191	0.187	0.187	0.185	
11/27/00	U.S	75.5	75.5	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.108
	D.S	74.6	74.6	74.6	74.6	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.185	0.183	0.183	0.183	0.163	0.163	0.172	0.174	0.175	0.175	0.175	0.177	
11/28/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	75.5	75.5	2.277
	D.S	74.5	74.5	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.177	0.179	0.181	0.191	0.199	0.199	0.197	0.195	0.191	0.191	0.191	0.189	
11/29/00	U.S	75.5	75.5	75.5	74.5	75.6	75.6	75.5	75.6	75.7	75.6	75.6	75.6	2.070
	D.S	74.6	74.6	74.6	74.6	74.5	74.4	74.4	74.4	74.4	74.5	74.6	74.6	
	Discharge	0.187	0.185	0.185	0.181	0.163	0.161	0.153	0.155	0.160	0.174	0.181	0.187	
11/30/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.7	2.150
	D.S	74.6	74.6	74.6	74.6	74.6	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.187	0.193	0.195	0.197	0.193	0.174	0.166	0.166	0.166	0.166	0.177	0.170	
12/01/00	U.S	75.7	75.7	75.7	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.089
	D.S	74.5	74.5	74.6	74.6	74.6	74.6	74.6	74.5	74.5	74.5	74.5	74.4	
	Discharge	0.172	0.172	0.183	0.193	0.199	0.181	0.172	0.166	0.166	0.163	0.161	0.161	
12/02/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.935
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.161	0.161	0.161	0.161	0.161	0.161	0.161	0.161	0.161	0.161	0.161	0.161	
12/03/00	U.S	75.6	75.6	75.7	75.7	75.6	75.6	75.6	75.6	75.5	75.5	75.5	75.5	2.269
	D.S	74.5	74.5	74.5	74.5	74.5	74.6	74.7	74.7	74.7	74.7	74.6	74.5	
	Discharge	0.170	0.168	0.170	0.170	0.193	0.203	0.209	0.212	0.212	0.199	0.185	0.179	
12/04/00	U.S	75.5	75.5	75.5	75.6	75.6	75.7	75.7	75.7	75.7	75.7	75.7	75.7	2.028
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.179	0.179	0.179	0.166	0.165	0.165	0.172	0.165	0.165	0.165	0.165	0.165	
12/05/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.688
	D.S	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	
	Discharge	0.141	0.141	0.141	0.141	0.141	0.141	0.139	0.141	0.141	0.141	0.141	0.141	
12/06/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	1.704
	D.S	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	
	Discharge	0.141	0.141	0.141	0.141	0.142	0.142	0.142	0.142	0.142	0.142	0.144	0.144	
12/07/00	U.S	75.5	75.5	75.5	75.5	75.5	75.6	75.6	75.6	75.6	75.6	75.5	75.5	1.804
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.147	0.147	0.147	0.144	0.147	0.148	0.153	0.155	0.155	0.153	0.155	0.155	
12/08/00	U.S	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	1.853
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.151	
12/09/00	U.S	75.5	75.6	75.6	75.6	75.5	75.5	75.5	75.5	75.4	75.4	75.4	75.5	1.768
	D.S	74.4	74.4	74.4	74.4	74.5	74.4	74.4	74.4	74.3	74.3	74.3	74.2	
	Discharge	0.151	0.150	0.150	0.150	0.165	0.160	0.155	0.151	0.144	0.141	0.128	0.124	
12/10/00	U.S	75.8	75.7	75.6	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	1.980
	D.S	74.3	74.4	74.6	74.6	74.6	74.5	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.134	0.161	0.187	0.199	0.197	0.170	0.160	0.155	0.155	0.155	0.155	0.155	

Table 9-2. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	total
12/11/00	U.S	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	1.856
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
12/12/00	U.S	75.5	75.5	75.6	75.6	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	1.963
	D.S	74.4	74.4	74.4	74.4	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.158	0.158	0.160	0.161	0.174	0.165	0.165	0.165	0.165	0.165	0.165	0.165	
12/13/00	U.S	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.6	1.989
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.4	74.5	74.5	74.5	
	Discharge	0.166	0.166	0.166	0.166	0.166	0.166	0.166	0.165	0.161	0.166	0.165	0.166	
12/14/00	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.1	75	75	75	75	1.997
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.166	0.166	0.166	0.166	0.166	0.166	0.166	0.166	0.166	0.166	0.166	0.166	
12/15/00	U.S	74.90	74.87	74.83	74.82	74.82	74.81	74.79	74.78	74.78	74.76	74.76	74.76	2.061
	D.S	74.50	74.50	74.50	74.50	74.50	74.50	74.50	74.50	74.50	74.50	74.50	74.50	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
12/16/00	U.S	74.76	74.78	74.79	74.80	74.81	74.81	74.81	74.82	74.83	74.85	74.83	74.82	2.061
	D.S	74.50	74.50	74.50	74.50	74.50	74.50	74.50	74.50	74.50	74.50	74.50	74.50	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
12/17/00	U.S	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	74.8	2.061
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
12/18/00	U.S	74.76	74.76	74.74	74.72	74.69	74.68	74.65	74.65	74.64	74.75	75.13	75.26	1.662
	D.S	74.30	74.30	74.30	74.30	74.30	74.30	74.30	74.30	74.30	74.30	74.30	74.23	
	Discharge	0.139	0.139	0.139	0.139	0.139	0.139	0.139	0.139	0.139	0.139	0.139	0.129	
12/19/00	U.S	75.4	75.5	75.5	75.6	75.6	75.6	75.7	75.7	75.8	75.8	75.9	75.9	2.061
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
12/20/00	U.S	75.9	75.9	75.9	75.9	75.9	75.9	75.9	75.9	75.9	75.9	75.9	75.9	2.288
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	
12/21/00	U.S	75.8	75.8	75.7	75.7	75.8	75.8	75.8	75.8	75.8	75.8	75.7	75.7	2.288
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	
12/22/00	U.S	75.7	75.7	75.7	75.7	75.8	75.8	75.8	75.8	75.8	75.8	75.8	75.8	1.505
	D.S	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	
	Discharge	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	
12/23/00	U.S	75.8	75.8	75.8	75.8	75.8	75.7	26.9	75.7	75.7	75.7	75.7	75.7	1.355
	D.S	74.1	74.1	74.1	74.1	74.1	74.1	74.1	74.1	74.1	74.1	74.1	74.1	
	Discharge	0.113	0.113	0.113	0.113	0.113	0.113	0.113	0.113	0.113	0.113	0.113	0.113	
12/24/00	U.S	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	1.355
	D.S	74.1	74.1	74.1	74.1	74.1	74.1	74.1	74.1	74.1	74.1	74.1	74.1	
	Discharge	0.113	0.113	0.113	0.113	0.113	0.113	0.113	0.113	0.113	0.113	0.113	0.113	
12/25/00	U.S	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.6	75.5	75.5	2.061
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
12/26/00	U.S	75.5	75.5	75.4	75.4	75.4	75.5	75.7	75.6	75.6	75.7	75.7	75.7	2.288
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	
12/27/00	U.S	75.7	75.7	75.7	75.7	75.8	75.8	75.8	75.8	75.8	75.8	75.8	75.8	2.061
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
12/28/00	U.S	75.8	75.9	75.9	75.9	75.9	75.9	75.9	75.8	75.8	75.8	75.8	75.8	2.288
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	

Table 9-2. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	total
12/29/00	U.S	75.7	75.7	75.7	75.7	75.7	75.7	75.6	75.6	75.6	75.6	75.6	75.6	2.288
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	
12/30/00	U.S	75.7	75.7	75.7	75.7	75.7	75.7	75.6	75.6	75.6	75.6	75.6	75.6	2.061
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
12/31/00	U.S	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	75.5	75.6	75.7	75.7	2.061
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
01/01/01	U.S	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	75.5	75.6	75.7	75.7	2.061
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
01/02/01	U.S	75.7	75.7	75.7	75.7	75.7	75.6	75.5	75.5	75.5	75.5	75.5	75.5	2.061
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
01/03/01	U.S	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	75.5	2.061
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
01/04/01	U.S	75.8	75.8	75.8	75.8	75.8	75.8	75.8	75.8	75.8	75.8	75.8	75.8	2.061
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
01/05/01	U.S	75.8	75.8	75.8	75.8	75.8	75.9	75.9	76	76	76	76	75.8	2.061
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
01/06/01	U.S	75.6	75.4	75.3	75.5	75.5	75.5	75.5	75.5	75.5	75.6	75.6	75.5	2.061
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
01/07/01	U.S	75.5	75.5	75.6	75.6	75.6	75.8	75.9	75.6	75.6	75.5	75.6	75.6	2.061
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
01/08/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.505
	D.S	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	
	Discharge	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	0.125	
01/09/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.7	75.7	1.476
	D.S	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	74.2	
	Discharge	0.119	0.119	0.119	0.119	0.119	0.119	0.119	0.119	0.119	0.119	0.119	0.119	
01/10/01	U.S	75.7	75.7	75.7	75.7	75.6	75.6	75.5	75.6	75.6	75.6	75.6	75.6	1.731
	D.S	74.2	74.3	74.3	74.4	74.4	74.4	74.3	74.3	74.3	74.3	74.3	74.3	
	Discharge	0.131	0.139	0.142	0.151	0.150	0.145	0.145	0.145	0.145	0.145	0.145	0.145	
01/11/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.672
	D.S	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	
	Discharge	0.139	0.139	0.139	0.139	0.139	0.139	0.139	0.139	0.139	0.139	0.139	0.139	
01/12/01	U.S	75.6	75.6	75.6	75.6	75.6	75.5	75.6	75.6	75.6	75.6	75.6	75.6	1.355
	D.S	74.1	74.1	74.1	74.1	74.1	74.1	74.1	74.1	74.1	74.1	74.1	74.1	
	Discharge	0.113	0.113	0.113	0.113	0.113	0.113	0.113	0.113	0.113	0.113	0.113	0.113	
01/13/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.374
	D.S	74.1	74.1	74.1	74.1	74.1	74.1	74.1	74.1	74.1	74.1	74.2	74.2	
	Discharge	0.113	0.113	0.113	0.113	0.113	0.113	0.113	0.113	0.113	0.113	0.113	0.113	
01/14/01	U.S	75.7	75.7	75.8	75.7	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.867
	D.S	74.3	74.3	74.3	74.5	74.5	74.5	74.5	74.5	74.4	74.4	74.4	74.4	
	Discharge	0.134	0.139	0.145	0.166	0.172	0.166	0.168	0.168	0.158	0.155	0.148	0.147	
01/15/01	U.S	75.6	75.6	75.6	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.740
	D.S	74.4	74.3	74.3	74.3	74.2	74.3	74.3	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.147	0.142	0.142	0.141	0.127	0.134	0.141	0.150	0.158	0.156	0.155	0.148	

Table 9-2. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	total
01/16/01	U.S	75.6	75.6	75.6	75.6	75.6	75.7	75.6	75.6	75.6	75.6	75.6	75.6	1.839
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.5	74.4	74.4	74.4	74.4	
	Discharge	0.148	0.148	0.150	0.150	0.153	0.153	0.163	0.165	0.155	0.153	0.151	0.150	
01/17/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	5.61	75.7	75.7	75.7	75.7	75.7	1.905
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.5	74.5	74.6	
	Discharge	0.156	0.156	0.156	0.156	0.156	0.156	0.147	0.148	0.158	0.165	0.168	0.181	
01/18/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.7	1.893
	D.S	74.6	74.6	74.5	74.5	74.5	74.4	74.4	74.4	74.3	74.3	74.3	74.3	
	Discharge	0.183	0.181	0.177	0.175	0.166	0.161	0.153	0.147	0.139	0.135	0.134	0.141	
01/19/01	U.S	75.7	75.6	75.6	75.6	75.6	75.7	75.7	75.6	75.5	75.6	75.6	75.6	1.941
	D.S	74.3	74.4	74.5	74.5	74.5	74.4	74.4	74.5	74.5	74.5	74.4	74.4	
	Discharge	0.142	0.156	0.165	0.174	0.166	0.158	0.158	0.166	0.172	0.165	0.161	0.158	
01/20/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.7	75.6	75.6	75.6	75.6	1.893
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.156	0.158	0.161	0.161	0.161	0.153	0.147	0.153	0.161	0.160	0.160	0.161	
01/21/01	U.S	75.7	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.873
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.5	74.5	74.4	74.3	
	Discharge	0.156	0.156	0.155	0.156	0.147	0.150	0.155	0.172	0.170	0.160	0.151	0.145	
01/22/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.815
	D.S	74.3	74.3	74.3	74.3	74.3	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.144	0.142	0.144	0.139	0.148	0.158	0.160	0.160	0.158	0.155	0.155	0.153	
01/23/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.7	75.6	75.6	75.6	75.6	75.6	1.641
	D.S	74.4	74.3	74.3	74.3	74.3	74.2	74.2	74.3	74.3	74.3	74.3	74.3	
	Discharge	0.147	0.142	0.141	0.141	0.138	0.128	0.127	0.134	0.136	0.136	0.136	0.135	
01/24/01	U.S	75.6	75.7	75.7	75.7	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.878
	D.S	74.3	74.4	74.4	74.5	74.5	74.5	74.5	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.141	0.147	0.151	0.163	0.172	0.166	0.163	0.160	0.155	0.153	0.155	0.153	
01/25/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.953
	D.S	74.4	74.4	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.4	74.4	74.4	
	Discharge	0.156	0.158	0.165	0.168	0.166	0.165	0.165	0.163	0.163	0.161	0.161	0.161	
01/26/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.901
	D.S	74.4	74.4	74.5	74.4	74.4	74.4	74.4	74.5	74.4	74.4	74.4	74.4	
	Discharge	0.161	0.161	0.163	0.161	0.161	0.161	0.163	0.161	0.153	0.153	0.151	0.150	
01/27/01	U.S	75.6	75.6	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	1.814
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.150	0.150	0.151	0.151	0.151	0.151	0.151	0.151	0.151	0.151	0.151	0.151	
01/28/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.768
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.3	74.3	
	Discharge	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.147	0.144	0.142	
01/29/01	U.S	75.6	75.6	75.6	75.6	75.6	75.7	75.7	75.7	75.7	75.6	75.6	75.6	1.689
	D.S	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.4	74.4	74.4	
	Discharge	0.141	0.139	0.136	0.136	0.139	0.134	0.134	0.135	0.148	0.150	0.150	0.147	
01/30/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	76.5	1.729
	D.S	74.4	74.4	74.4	74.4	74.3	74.3	74.3	74.4	74.3	74.3	74.3	74.3	
	Discharge	0.147	0.147	0.148	0.139	0.138	0.138	0.148	0.148	0.145	0.144	0.144	0.142	
01/31/01	U.S	75.6	75.6	75.6	75.6	75.6	75.7	75.7	75.6	75.6	75.6	75.6	75.5	1.809
	D.S	74.3	74.3	74.3	74.3	74.3	74.3	74.4	74.4	74.5	74.4	74.4	74.4	
	Discharge	0.142	0.144	0.145	0.145	0.145	0.147	0.150	0.150	0.163	0.161	0.160	0.156	
02/01/01	U.S	75.5	75.5	75.5	75.5	75.6	75.6	75.6	75.7	75.7	75.7	75.7	75.7	1.728
	D.S	74.4	74.4	74.4	74.3	74.3	74.3	74.3	74.3	74.3	74.3	74.4	74.4	
	Discharge	0.151	0.153	0.151	0.144	0.144	0.135	0.135	0.134	0.141	0.144	0.147	0.150	
02/02/01	U.S	75.7	75.7	75.7	75.7	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.886
	D.S	74.4	74.4	74.3	74.3	74.5	74.5	74.4	74.4	74.4	74.5	74.5	74.5	
	Discharge	0.148	0.147	0.145	0.145	0.163	0.166	0.158	0.150	0.156	0.163	0.170	0.174	

Table 9-2. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	total
02/03/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.005
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.4	74.4	74.4	
	Discharge	0.174	0.174	0.174	0.174	0.172	0.170	0.165	0.166	0.163	0.161	0.158	0.156	
02/04/01	U.S	75.5	75.5	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.872
	D.S	74.4	74.4	74.4	74.4	74.4	74.5	74.5	74.5	74.5	74.4	74.3	74.3	
	Discharge	0.155	0.155	0.155	0.155	0.158	0.163	0.168	0.165	0.163	0.155	0.142	0.139	
02/05/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.737
	D.S	74.3	74.3	74.3	74.3	74.3	74.4	74.4	74.4	74.4	74.3	74.4	74.4	
	Discharge	0.141	0.142	0.142	0.142	0.145	0.147	0.147	0.147	0.142	0.147	0.147	0.148	
02/06/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.6	1.767
	D.S	74.3	74.3	74.3	74.3	74.3	74.3	74.4	74.4	74.4	74.4	74.3	74.3	
	Discharge	0.145	0.144	0.145	0.144	0.144	0.145	0.148	0.156	0.156	0.148	0.145	0.145	
02/07/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	1.760
	D.S	74.3	74.4	74.4	74.4	74.4	74.4	74.4	74.3	74.3	74.3	74.4	74.4	
	Discharge	0.144	0.148	0.150	0.151	0.150	0.148	0.136	0.135	0.145	0.148	0.153	0.150	
02/08/01	U.S	75.5	75.5	75.5	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.821
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.150	0.150	0.150	0.151	0.147	0.145	0.150	0.158	0.158	0.156	0.155	0.151	
02/09/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	1.860
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.153	0.151	0.153	0.153	0.155	0.156	0.156	0.161	0.161	0.155	0.153	0.151	
02/10/01	U.S	75.5	75.5	75.5	75.5	75.5	75.5	75.6	75.6	75.6	75.6	75.6	75.6	1.801
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.3	74.3	74.4	74.4	74.4	74.4	
	Discharge	0.153	0.153	0.153	0.153	0.158	0.156	0.142	0.141	0.150	0.147	0.147	0.148	
02/11/01	U.S	75.7	75.7	75.7	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	1.941
	D.S	74.4	74.4	74.4	74.4	74.5	74.5	74.5	74.5	74.5	74.5	74.4	74.4	
	Discharge	0.148	0.150	0.151	0.165	0.168	0.166	0.172	0.174	0.165	0.161	0.160	0.161	
02/12/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.856
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.172	0.172	0.172	0.172	0.172	
02/13/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.061
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
02/14/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.856
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
02/15/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.956
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
02/16/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.061
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
02/17/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.856
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
02/18/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.856
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	0.155	
02/19/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.956
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	
02/20/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.956
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	0.163	

Table 9-2. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	total
02/21/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.061
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
02/22/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.360
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.197	0.197	0.197	0.197	0.197	0.197	0.197	0.197	0.197	0.197	0.197	0.197	
02/23/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.288
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	
02/24/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.061
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
02/25/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.061
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
02/26/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.061
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
02/27/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.061
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
02/28/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.061
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
03/01/01	U.S	75.5	75.5	75.6	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.975
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.160	0.160	0.160	0.161	0.161	0.161	0.165	0.166	0.165	0.165	0.170	0.172	
03/02/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	2.686
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	75.5	75.5	74.5	
	Discharge	0.172	0.174	0.174	0.174	0.174	0.174	0.174	0.174	0.172	0.485	0.480	0.166	
03/03/01	U.S	75.5	74.5	74.5	74.5	74.6	74.6	74.6	74.6	74.6	74.6	74.6	75.6	1.864
	D.S	74.5	74.5	74.5	74.5	74.4	74.4	74.3	74.3	74.3	74.3	74.3	74.4	
	Discharge	0.170	0.170	0.170	0.172	0.150	0.144	0.144	0.144	0.144	0.144	0.144	0.155	
03/04/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.905
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.5	
	Discharge	0.161	0.155	0.153	0.151	0.155	0.158	0.161	0.161	0.160	0.158	0.160	0.172	
03/05/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.078
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.6	74.6	
	Discharge	0.170	0.170	0.170	0.172	0.172	0.170	0.170	0.166	0.166	0.181	0.185	0.187	
03/06/01	U.S	75.6	75.5	75.5	75.5	75.5	75.5	75.6	75.5	75.5	75.5	75.5	75.5	2.023
	D.S	74.6	74.6	74.6	74.6	74.5	74.5	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.191	0.191	0.191	0.193	0.177	0.161	0.155	0.155	0.153	0.153	0.151	0.153	
03/07/01	U.S	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.889
	D.S	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.5	74.5	
	Discharge	0.153	0.153	0.153	0.155	0.155	0.158	0.155	0.155	0.155	0.155	0.170	0.174	
03/08/01	U.S	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	75.5	75.5	75.6	75.6	1.916
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.174	0.177	0.177	0.179	0.177	0.113	0.165	0.161	0.148	0.148	0.148	0.148	
03/09/01	U.S	75.6	75.6	75.7	75.7	75.6	75.6	75.5	75.5	75.5	75.5	75.5	75.5	1.943
	D.S	74.4	74.4	74.4	74.4	74.5	74.5	74.6	74.5	74.4	74.4	74.4	74.3	
	Discharge	0.151	0.153	0.155	0.155	0.177	0.183	0.183	0.174	0.161	0.160	0.148	0.144	
03/10/01	U.S	75.6	75.6	75.6	75.6	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.933
	D.S	74.3	74.4	74.4	74.4	74.4	74.4	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.144	0.147	0.148	0.150	0.161	0.161	0.166	0.172	0.168	0.168	0.175	0.175	

Table 9-2. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	total
03/11/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	75.5	2.065
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.174	0.174	0.175	0.175	0.175	0.174	0.172	0.168	0.168	0.168	0.170	0.172	
03/12/01	U.S	75.5	75.5	75.5	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.176
	D.S	74.5	74.5	74.5	74.5	74.6	74.6	74.6	74.6	74.6	74.6	74.5	74.5	
	Discharge	0.175	0.175	0.179	0.179	0.183	0.185	0.187	0.187	0.189	0.179	0.179	0.179	
03/13/01	U.S	75.5	75.5	75.5	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	2.232
	D.S	74.6	74.6	74.6	74.6	74.5	74.5	74.5	74.5	74.6	74.6	74.6	74.6	
	Discharge	0.197	0.197	0.187	0.185	0.172	0.174	0.174	0.177	0.187	0.193	0.195	0.197	
03/14/01	U.S	75.5	75.5	75.5	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.169
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.197	0.197	0.199	0.191	0.187	0.185	0.172	0.170	0.168	0.166	0.168	0.170	
03/15/01	U.S	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.6	75.6	75.6	75.6	75.6	2.031
	D.S	74.5	74.5	74.5	74.5	74.5	74.6	74.6	74.5	74.5	74.5	74.4	74.4	
	Discharge	0.170	0.172	0.172	0.174	0.174	0.187	0.181	0.166	0.163	0.160	0.158	0.156	
03/16/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	2.107
	D.S	74.4	74.4	74.4	74.5	74.5	74.6	74.6	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.158	0.160	0.161	0.175	0.181	0.183	0.193	0.191	0.187	0.177	0.174	0.168	
03/17/01	U.S	75.5	75.5	75.5	75.5	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	1.889
	D.S	74.5	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	74.4	
	Discharge	0.163	0.161	0.160	0.160	0.158	0.156	0.156	0.156	0.155	0.155	0.155	0.155	
03/18/01	U.S	75.6	75.7	75.7	75.6	75.6	75.5	75.6	75.6	75.6	75.5	75.5	75.5	2.112
	D.S	74.4	74.4	74.6	74.6	74.6	74.6	74.6	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.156	0.156	0.185	0.195	0.191	0.183	0.181	0.174	0.172	0.174	0.174	0.174	
03/19/01	U.S	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	2.016
	D.S	74.5	74.4	74.4	74.4	74.4	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.163	0.160	0.160	0.160	0.166	0.170	0.174	0.174	0.174	0.174	0.172	0.172	
03/20/01	U.S	75.5	75.5	75.5	75.5	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.111
	D.S	74.5	74.5	74.6	74.6	74.6	74.6	74.6	74.5	74.5	74.5	74.5	74.6	
	Discharge	0.175	0.177	0.181	0.185	0.183	0.175	0.168	0.168	0.170	0.172	0.174	0.183	
03/21/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	2.208
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.5	74.5	74.5	74.5	
	Discharge	0.185	0.189	0.191	0.193	0.189	0.187	0.185	0.183	0.177	0.177	0.177	0.177	
03/22/01	U.S	75.5	75.5	75.5	75.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.019
	D.S	74.5	74.5	74.5	74.5	74.5	74.4	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.177	0.175	0.174	0.168	0.161	0.163	0.165	0.168	0.165	0.163	0.170	0.170	
03/23/01	U.S	75.6	5.59	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.5	75.5	75.5	2.126
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.6	74.6	74.6	74.6	
	Discharge	0.170	0.170	0.170	0.172	0.172	0.172	0.172	0.181	0.187	0.189	0.187	0.187	
03/24/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.061
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
03/25/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.061
	D.S	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	74.5	
	Discharge	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	0.172	
03/26/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.171
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	
03/27/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.171
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	
03/28/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	2.171
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Discharge	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	

Table 9-2. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	total
09/25/01	U.S	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	3.294
	D.S	75	75	75	75	75	75	75	75	75	75	75	75	
	Disharge	0.274	0.274	0.274	0.274	0.274	0.274	0.274	0.274	0.274	0.274	0.274	0.274	
09/26/01	U.S	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	3.127
	D.S	74.9	74.9	74.9	74.9	74.9	74.9	74.9	74.9	74.9	74.9	74.9	74.9	
	Disharge	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	0.261	
09/27/01	U.S	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	2.410
	D.S	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	74.7	
	Disharge	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	
09/28/01	U.S	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	2.288
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Disharge	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	
09/29/01	U.S	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	2.171
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Disharge	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	
09/30/01	U.S	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	75.7	2.171
	D.S	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	
	Disharge	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	0.181	

Table 9-3. Two-hour water levels and discharges of Kallabia Canal at Kobah Regulator.

Table 9-3. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	Total
03/18/00	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.336
	D.S	75.70	75.70	75.70	75.70	75.70	75.70	75.70	75.70	75.70	75.70	75.70	75.70	
	Discharge	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195	
03/19/00	U.S	76.40	76.40	76.40	76.40	76.40	76.40	76.40	76.40	76.40	76.40	76.40	76.40	2.336
	D.S	75.70	75.70	75.70	75.70	75.70	75.70	75.70	75.70	75.70	75.70	75.70	75.70	
	Discharge	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195	
03/20/00	U.S	76.40	76.40	76.40	76.40	76.40	76.40	76.40	76.40	76.40	76.40	76.40	76.40	2.414
	D.S	75.75	75.75	75.75	75.75	75.75	75.75	75.75	75.75	75.75	75.75	75.75	75.75	
	Discharge	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	
03/21/00	U.S	76.40	76.40	76.40	76.40	76.40	76.40	76.40	76.40	76.40	76.40	76.40	76.40	2.495
	D.S	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	
	Discharge	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	
03/22/00	U.S	76.44	76.44	76.44	76.44	76.44	76.44	76.44	76.44	76.44	76.44	76.44	76.44	2.446
	D.S	75.77	75.77	75.77	75.77	75.77	75.77	75.77	75.77	75.77	75.77	75.77	75.77	
	Discharge	0.204	0.204	0.204	0.204	0.204	0.204	0.204	0.204	0.204	0.204	0.204	0.204	
03/23/00	U.S	76.42	76.42	76.42	76.42	76.42	76.42	76.42	76.42	76.42	76.42	76.42	76.42	2.579
	D.S	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	
	Discharge	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	
03/24/00	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.336
	D.S	75.70	75.70	75.70	75.70	75.70	75.70	75.70	75.70	75.70	75.70	75.70	75.70	
	Discharge	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195	
03/25/00	U.S	76.42	76.42	76.42	76.42	76.42	76.42	76.42	76.42	76.42	76.42	76.42	76.42	2.596
	D.S	75.86	75.86	75.86	75.86	75.86	75.86	75.86	75.86	75.86	75.86	75.86	75.86	
	Discharge	0.216	0.216	0.216	0.216	0.216	0.216	0.216	0.216	0.216	0.216	0.216	0.216	
03/26/00	U.S	76.47	76.47	76.47	76.47	76.47	76.50	76.49	76.49	76.49	76.49	76.49	76.49	2.512
	D.S	75.81	75.81	75.81	75.81	75.81	75.81	75.81	75.81	75.81	75.81	75.81	75.81	
	Discharge	0.209	0.209	0.209	0.209	0.209	0.209	0.209	0.209	0.209	0.209	0.209	0.209	
03/27/00	U.S	76.44	76.44	76.44	76.44	76.47	76.50	76.49	76.49	76.49	76.49	76.49	76.49	2.540
	D.S	75.86	75.86	75.86	75.86	75.86	75.86	75.86	75.86	75.86	75.86	75.86	75.86	
	Discharge	0.216	0.216	0.216	0.216	0.216	0.209	0.209	0.209	0.209	0.209	0.209	0.209	
03/28/00	U.S	76.46	76.46	76.46	76.46	76.46	76.42	76.43	76.43	76.43	76.43	76.43	76.43	2.603
	D.S	75.88	75.88	75.88	75.88	75.88	75.87	75.85	75.85	75.85	75.85	75.85	75.85	
	Discharge	0.219	0.219	0.219	0.219	0.219	0.218	0.215	0.215	0.215	0.215	0.215	0.215	
03/29/00	U.S	76.43	76.43	76.43	76.43	76.43	76.41	76.41	76.41	76.41	76.41	76.41	76.41	2.621
	D.S	75.90	75.90	75.90	75.90	75.90	75.89	75.85	75.85	75.85	75.85	75.85	75.85	
	Discharge	0.222	0.222	0.222	0.222	0.222	0.221	0.215	0.215	0.215	0.215	0.215	0.215	
03/30/00	U.S	76.50	76.50	76.50	76.50	76.50	76.48	76.45	76.45	76.45	76.45	76.45	76.45	2.451
	D.S	75.93	75.93	75.93	75.93	75.93	75.92	75.60	75.60	75.60	75.60	75.60	75.60	
	Discharge	0.227	0.227	0.227	0.227	0.227	0.225	0.182	0.182	0.182	0.182	0.182	0.182	
03/31/00	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.718
	D.S	75.93	75.93	75.93	75.93	75.93	75.93	75.93	75.93	75.93	75.93	75.93	75.93	
	Discharge	0.227	0.227	0.227	0.227	0.227	0.227	0.227	0.227	0.227	0.227	0.227	0.227	
04/01/00	U.S	76.47	76.47	76.47	76.47	76.47	76.47	76.45	76.45	76.45	76.45	76.45	76.45	2.560
	D.S	75.85	75.85	75.85	75.85	75.85	75.84	75.83	75.83	75.83	75.83	75.83	75.83	
	Discharge	0.215	0.215	0.215	0.215	0.215	0.213	0.212	0.212	0.212	0.212	0.212	0.212	
04/02/00	U.S	76.51	76.51	76.51	76.51	76.51	76.50	76.48	76.40	76.40	76.40	76.40	76.40	2.579
	D.S	75.86	75.86	75.86	75.86	75.86	75.85	75.85	75.84	75.84	75.84	75.84	75.84	
	Discharge	0.216	0.216	0.216	0.216	0.216	0.215	0.215	0.213	0.213	0.213	0.213	0.213	
04/03/00	U.S	76.46	76.46	76.46	76.46	76.46	76.48	76.51	76.54	76.54	76.54	76.54	76.54	2.420
	D.S	75.76	75.76	75.76	75.76	75.76	75.74	75.75	75.75	75.75	75.75	75.75	75.75	
	Discharge	0.203	0.203	0.203	0.203	0.203	0.200	0.201	0.201	0.201	0.201	0.201	0.201	

Table 9-3. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	Total
04/04/00	U.S	76.53	76.53	76.53	76.53	76.53	76.53	76.51	76.51	76.51	76.51	76.51	76.51	2.586
	D.S	75.86	75.86	75.86	75.86	75.86	75.85	75.85	75.85	75.85	75.85	75.85	75.85	
	Discharge	0.216	0.216	0.216	0.216	0.216	0.215	0.215	0.215	0.215	0.215	0.215	0.215	
04/05/00	U.S	76.50	76.50	76.50	76.50	75.62	75.60	75.60	75.60	75.60	75.60	75.60	75.60	2.495
	D.S	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	
	Discharge	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	
04/06/00	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.495
	D.S	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	
	Discharge	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	
04/07/00	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.579
	D.S	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	
	Discharge	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	
04/08/00	U.S	76.51	76.51	76.51	76.51	76.51	76.55	76.52	76.51	76.51	76.51	76.51	76.51	2.384
	D.S	75.58	75.58	75.58	75.58	75.58	75.75	75.81	75.85	75.85	75.85	75.85	75.85	
	Discharge	0.180	0.180	0.180	0.180	0.180	0.201	0.209	0.215	0.215	0.215	0.215	0.215	
04/09/00	U.S	76.45	76.45	76.45	76.45	76.47	76.47	76.48	76.49	76.49	76.49	76.49	76.49	2.501
	D.S	75.84	75.84	75.84	75.84	75.84	75.80	75.79	75.77	75.77	75.77	75.77	75.77	
	Discharge	0.213	0.213	0.213	0.213	0.213	0.208	0.207	0.204	0.204	0.204	0.204	0.204	
04/10/00	U.S	76.51	76.51	76.51	76.51	76.51	76.53	76.50	76.50	76.50	76.50	76.50	76.50	2.616
	D.S	75.88	75.88	75.88	75.88	75.88	75.90	75.86	75.86	75.86	75.86	75.86	75.86	
	Discharge	0.219	0.219	0.219	0.219	0.219	0.222	0.216	0.216	0.216	0.216	0.216	0.216	
04/11/00	U.S	76.48	76.48	76.48	76.48	76.48	76.48	76.48	76.48	76.48	76.48	76.48	76.48	2.553
	D.S	75.84	75.84	75.84	75.84	75.84	75.84	75.83	75.83	75.83	75.83	75.83	75.83	
	Discharge	0.213	0.213	0.213	0.213	0.213	0.213	0.212	0.212	0.212	0.212	0.212	0.212	
04/12/00	U.S	76.46	76.46	76.46	76.46	76.46	76.45	76.46	76.46	76.46	76.46	76.46	76.46	2.674
	D.S	75.91	75.91	75.91	75.91	75.91	75.90	75.91	75.90	75.90	75.90	75.90	75.90	
	Discharge	0.224	0.224	0.224	0.224	0.224	0.222	0.224	0.222	0.222	0.222	0.222	0.222	
04/13/00	U.S	76.51	76.51	76.51	76.51	76.51	76.50	76.52	76.51	76.51	76.51	76.51	76.51	2.613
	D.S	75.87	75.87	75.87	75.87	75.87	75.87	75.87	75.87	75.87	75.87	75.87	75.87	
	Discharge	0.218	0.218	0.218	0.218	0.218	0.218	0.218	0.218	0.218	0.218	0.218	0.218	
04/14/00	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.495
	D.S	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	
	Discharge	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	
04/15/00	U.S	76.46	76.46	76.46	76.46	76.46	76.48	76.47	76.45	76.45	76.45	76.45	76.45	2.654
	D.S	75.93	75.93	75.93	75.93	75.93	75.93	75.89	75.88	75.86	75.86	75.86	75.86	
	Discharge	0.227	0.227	0.227	0.227	0.227	0.221	0.219	0.216	0.216	0.216	0.216	0.216	
04/16/00	U.S	76.51	76.51	76.51	76.51	76.51	76.51	76.52	76.53	76.53	76.53	76.53	76.53	2.596
	D.S	75.86	75.86	75.86	75.86	75.86	75.86	75.86	75.86	75.86	75.86	75.86	75.86	
	Discharge	0.216	0.216	0.216	0.216	0.216	0.216	0.216	0.216	0.216	0.216	0.216	0.216	
04/17/00	U.S	76.47	76.47	76.47	76.47	76.47	76.45	76.45	76.43	76.43	76.43	76.43	76.43	2.587
	D.S	75.87	75.87	75.87	75.87	75.87	75.87	75.84	75.84	75.84	75.84	75.84	75.84	
	Discharge	0.218	0.218	0.218	0.218	0.218	0.218	0.213	0.213	0.213	0.213	0.213	0.213	
04/18/00	U.S	76.46	76.46	76.46	76.46	76.46	76.46	76.50	76.49	76.49	76.49	76.49	76.49	2.676
	D.S	75.93	75.93	75.93	75.93	75.93	75.93	75.89	75.88	75.88	75.88	75.88	75.88	
	Discharge	0.227	0.227	0.227	0.227	0.227	0.227	0.221	0.219	0.219	0.219	0.219	0.219	
04/19/00	U.S	76.52	76.52	76.52	76.52	76.52	76.52	76.48	76.49	76.49	76.49	76.49	76.49	2.619
	D.S	75.86	75.86	75.86	75.86	75.86	75.86	75.87	75.89	75.89	75.89	75.89	75.89	
	Discharge	0.216	0.216	0.216	0.216	0.216	0.216	0.218	0.221	0.221	0.221	0.221	0.221	
04/20/00	U.S	76.47	76.47	76.47	76.47	76.47	76.47	76.51	76.52	76.52	76.52	76.52	76.52	2.586
	D.S	75.86	75.86	75.86	75.86	75.86	75.86	75.84	75.85	75.85	75.85	75.85	75.85	
	Discharge	0.216	0.216	0.216	0.216	0.216	0.216	0.213	0.215	0.215	0.215	0.215	0.215	

Table 9-3. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	Total
04/21/00	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.665
	D.S	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	
	Discharge	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	
04/22/00	U.S	76.46	76.46	76.46	76.46	76.46	76.47	76.47	76.47	76.47	76.47	76.47	76.47	2.606
	D.S	75.87	75.87	75.87	75.87	75.87	75.87	75.87	75.86	75.86	75.86	75.86	75.86	
	Discharge	0.218	0.218	0.218	0.218	0.218	0.218	0.216	0.216	0.216	0.216	0.216	0.216	
04/23/00	U.S	76.53	76.53	76.53	76.53	76.53	76.53	76.54	76.54	76.54	76.54	76.54	76.54	2.648
	D.S	75.89	75.89	75.89	75.89	75.89	75.89	75.89	75.89	75.89	75.89	75.89	75.89	
	Discharge	0.221	0.221	0.221	0.221	0.221	0.221	0.221	0.221	0.221	0.221	0.221	0.221	
04/24/00	U.S	76.48	76.48	76.48	76.48	76.48	76.50	76.50	76.49	76.49	76.49	76.49	76.49	2.389
	D.S	75.75	75.75	75.75	75.75	75.75	75.73	75.73	75.72	75.72	75.72	75.72	75.72	
	Discharge	0.201	0.201	0.201	0.201	0.199	0.199	0.197	0.197	0.197	0.197	0.197	0.197	
04/25/00	U.S	76.40	76.40	76.40	76.40	76.40	76.40	76.40	76.40	76.40	76.40	76.40	76.40	2.528
	D.S	75.82	75.82	75.82	75.82	75.82	75.82	75.82	75.82	75.82	75.82	75.82	75.82	
	Discharge	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	
04/26/00	U.S	76.44	76.44	76.44	76.44	76.44	76.47	76.48	76.48	76.48	76.48	76.48	76.48	2.475
	D.S	75.80	75.80	75.80	75.80	75.80	75.77	75.78	75.78	75.78	75.78	75.78	75.78	
	Discharge	0.208	0.208	0.208	0.208	0.208	0.204	0.205	0.205	0.205	0.205	0.205	0.205	
04/27/00	U.S	76.49	76.49	76.49	76.49	76.49	76.49	76.50	76.50	76.50	76.50	76.50	76.50	2.718
	D.S	75.93	75.93	75.93	75.93	75.93	75.93	75.93	75.93	75.93	75.93	75.93	75.93	
	Discharge	0.227	0.227	0.227	0.227	0.227	0.227	0.227	0.227	0.227	0.227	0.227	0.227	
04/28/00	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.579
	D.S	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	
	Discharge	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	
04/29/00	U.S	76.44	76.44	76.44	76.44	76.44	76.45	76.46	76.45	76.45	76.45	76.45	76.45	2.614
	D.S	75.86	75.86	75.86	75.86	75.86	75.87	75.88	75.88	75.88	75.88	75.88	75.88	
	Discharge	0.216	0.216	0.216	0.216	0.216	0.218	0.219	0.219	0.219	0.219	0.219	0.219	
04/30/00	U.S	76.48	76.48	76.48	76.48	76.48	76.48	76.49	76.49	76.49	76.49	76.49	76.49	2.690
	D.S	75.93	75.93	75.93	75.93	75.93	75.93	75.92	75.90	75.90	75.90	75.90	75.90	
	Discharge	0.227	0.227	0.227	0.227	0.227	0.225	0.222	0.222	0.222	0.222	0.222	0.222	
05/01/00	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.579
	D.S	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	
	Discharge	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	
05/02/00	U.S	76.45	76.45	76.45	76.45	76.45	76.45	76.45	76.45	76.45	76.45	76.45	76.45	2.681
	D.S	75.91	75.91	75.91	75.91	75.91	75.91	75.91	75.90	75.91	75.91	75.91	75.91	
	Discharge	0.224	0.224	0.224	0.224	0.224	0.224	0.222	0.224	0.224	0.224	0.224	0.224	
05/03/00	U.S	76.44	76.44	76.44	76.44	76.44	76.44	76.45	76.45	76.45	76.45	76.45	76.45	2.699
	D.S	75.93	75.93	75.93	75.93	75.93	75.93	75.93	75.90	75.91	75.91	75.91	75.91	
	Discharge	0.227	0.227	0.227	0.227	0.227	0.227	0.222	0.224	0.224	0.224	0.224	0.224	
05/04/00	U.S	76.45	76.45	76.45	76.45	76.45	76.45	76.45	76.46	76.46	76.46	76.46	76.46	2.646
	D.S	75.90	75.90	75.90	75.90	75.90	75.90	75.87	75.88	75.88	75.88	75.88	75.88	
	Discharge	0.222	0.222	0.222	0.222	0.222	0.222	0.218	0.219	0.219	0.219	0.219	0.219	
05/05/00	U.S	76.60	76.60	76.60	76.60	76.60	76.60	76.60	76.60	76.60	76.60	76.60	76.60	2.414
	D.S	75.75	75.75	75.75	75.75	75.75	75.75	75.75	75.75	75.75	75.75	75.75	75.75	
	Discharge	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	0.201	
05/06/00	U.S	76.45	76.45	76.45	76.45	76.45	76.45	76.47	76.49	76.49	76.49	76.49	76.49	2.545
	D.S	75.83	75.83	75.83	75.83	75.83	75.83	75.83	75.83	75.83	75.83	75.83	75.83	
	Discharge	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	0.212	
05/07/00	U.S	76.48	76.48	76.48	76.48	76.48	76.48	76.51	76.51	76.50	76.50	76.50	76.50	2.847
	D.S	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	
	Discharge	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	

Table 9-3. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	Total
05/08/00	U.S	76.61	76.61	76.61	76.61	76.61	77.00	77.60	76.56	76.56	76.56	76.56	76.56	2.847
	D.S	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	
	Discharge	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
05/09/00	U.S	76.02	76.02	76.02	76.02	76.02	76.18	76.37	76.38	76.38	76.38	76.38	76.38	2.847
	D.S	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	
	Discharge	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
05/10/00	U.S	76.52	76.52	76.52	76.52	76.52	76.52	76.53	76.52	76.52	76.52	76.52	76.52	2.942
	D.S	76.05	76.05	76.05	76.05	76.05	76.05	76.05	76.05	76.05	76.05	76.05	76.05	
	Discharge	0.245	0.245	0.245	0.245	0.245	0.245	0.245	0.245	0.245	0.245	0.245	0.245	
05/11/00	U.S	76.52	76.52	76.52	76.52	76.52	76.51	76.52	76.51	76.51	76.51	76.51	76.51	2.942
	D.S	76.05	76.05	76.05	76.05	76.05	76.05	76.05	76.05	76.05	76.05	76.05	76.05	
	Discharge	0.245	0.245	0.245	0.245	0.245	0.245	0.245	0.245	0.245	0.245	0.245	0.245	
05/12/00	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.942
	D.S	76.05	76.05	76.05	76.05	76.05	76.05	76.05	76.05	76.05	76.05	76.05	76.05	
	Discharge	0.245	0.245	0.245	0.245	0.245	0.245	0.245	0.245	0.245	0.245	0.245	0.245	
05/13/00	U.S	76.04	76.04	76.04	76.04	76.04	76.51	76.52	75.85	75.85	75.85	75.85	75.85	2.847
	D.S	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	
	Discharge	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
05/14/00	U.S	76.51	76.51	76.51	76.51	76.51	76.51	76.53	76.49	76.49	76.49	76.49	76.49	2.856
	D.S	76.01	76.01	76.01	76.01	76.01	76.01	76.00	76.00	76.00	76.00	76.00	76.00	
	Discharge	0.239	0.239	0.239	0.239	0.239	0.239	0.239	0.237	0.237	0.237	0.237	0.237	
05/15/00	U.S	76.50	76.50	76.50	76.50	76.50	76.51	76.52	76.50	76.50	76.50	76.50	76.50	2.856
	D.S	76.01	76.01	76.01	76.01	76.01	76.01	76.00	76.00	76.00	76.00	76.00	76.00	
	Discharge	0.239	0.239	0.239	0.239	0.239	0.239	0.239	0.237	0.237	0.237	0.237	0.237	
05/16/00	U.S	76.50	76.50	76.50	76.50	76.50	77.21	77.21	77.22	77.22	77.22	77.22	77.22	2.791
	D.S	75.97	75.97	75.97	75.97	75.97	75.97	75.97	75.97	75.97	75.97	75.97	75.97	
	Discharge	0.233	0.233	0.233	0.233	0.233	0.233	0.233	0.233	0.233	0.233	0.233	0.233	
05/17/00	U.S	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	2.791
	D.S	75.97	75.97	75.97	75.97	75.97	75.97	75.97	75.97	75.97	75.97	75.97	75.97	
	Discharge	0.233	0.233	0.233	0.233	0.233	0.233	0.233	0.233	0.233	0.233	0.233	0.233	
05/18/00	U.S	76.48	76.48	76.48	76.48	76.48	76.47	76.47	76.48	76.48	76.48	76.48	76.48	2.825
	D.S	75.99	75.99	75.99	75.99	75.99	75.98	75.98	75.99	75.99	75.99	75.99	75.99	
	Discharge	0.236	0.236	0.236	0.236	0.236	0.234	0.234	0.236	0.236	0.236	0.236	0.236	
05/19/00	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	3.100
	D.S	76.13	76.13	76.13	76.13	76.13	76.13	76.13	76.13	76.13	76.13	76.13	76.13	
	Discharge	0.258	0.258	0.258	0.258	0.258	0.258	0.258	0.258	0.258	0.258	0.258	0.258	
05/20/00	U.S	76.52	76.52	76.52	76.52	76.52	76.50	76.49	76.47	76.47	76.47	76.47	76.47	3.040
	D.S	76.10	76.10	76.10	76.10	76.10	76.10	76.10	76.10	76.10	76.10	76.10	76.10	
	Discharge	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	
05/21/00	U.S	76.50	76.50	76.50	76.50	76.50	76.51	76.49	76.50	76.50	76.50	76.50	76.50	3.040
	D.S	76.10	76.10	76.10	76.10	76.10	76.10	76.10	76.10	76.10	76.10	76.10	76.10	
	Discharge	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	
05/22/00	U.S	76.49	76.49	76.49	76.49	76.49	76.49	76.49	76.49	76.49	76.49	76.49	76.49	3.040
	D.S	76.10	76.10	76.10	76.10	76.10	76.10	76.10	76.10	76.10	76.10	76.10	76.10	
	Discharge	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	
05/23/00	U.S	76.53	76.53	76.53	76.53	76.53	76.52	76.51	76.52	76.52	76.52	76.52	76.52	3.040
	D.S	76.10	76.10	76.10	76.10	76.10	76.10	76.10	76.10	76.10	76.10	76.10	76.10	
	Discharge	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	
05/24/00	U.S	76.50	76.50	76.50	76.50	76.50	76.49	76.47	76.49	76.49	76.49	76.49	76.49	3.141
	D.S	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	
	Discharge	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	

Table 9-3. (Continued).

Table 9-3. (Continued).

Table 9-3. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	Total
06/28/00	U.S	76.46	76.46	76.46	76.46	76.46	76.46	76.46	76.46	76.46	76.46	76.46	76.46	3.141
	D.S	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	
	Discharge	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	
06/29/00	U.S	76.47	76.47	76.47	76.47	76.47	76.47	76.47	76.47	76.47	76.47	76.47	76.47	3.141
	D.S	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	
	Discharge	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	
06/30/00	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	3.141
	D.S	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	
	Discharge	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	
07/01/00	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.49	76.49	76.49	76.49	76.49	76.49	2.930
	D.S	76.05	76.05	76.05	76.05	76.05	76.04	76.04	76.04	76.04	76.04	76.04	76.04	
	Discharge	0.245	0.245	0.245	0.245	0.245	0.244	0.244	0.244	0.244	0.244	0.244	0.244	
07/02/00	U.S	76.48	76.48	76.48	76.48	76.48	76.48	76.48	76.48	76.48	76.48	76.48	76.48	2.951
	D.S	76.06	76.06	76.06	76.06	76.06	76.06	76.05	76.05	76.05	76.05	76.05	76.05	
	Discharge	0.247	0.247	0.247	0.247	0.247	0.247	0.245	0.245	0.245	0.245	0.245	0.245	
07/03/00	U.S	76.49	76.49	76.49	76.49	76.48	76.48	76.47	76.46	76.46	76.46	76.46	76.46	2.960
	D.S	76.07	76.07	76.07	76.07	76.07	76.06	76.05	76.05	76.05	76.05	76.05	76.05	
	Discharge	0.248	0.248	0.248	0.248	0.248	0.247	0.245	0.245	0.245	0.245	0.245	0.245	
07/04/00	U.S	76.47	76.47	76.47	76.47	76.47	76.46	76.46	76.45	76.45	76.45	76.45	76.45	2.934
	D.S	76.05	76.05	76.05	76.05	76.05	76.05	76.04	76.04	76.04	76.04	76.04	76.04	
	Discharge	0.245	0.245	0.245	0.245	0.245	0.245	0.244	0.244	0.244	0.244	0.244	0.244	
07/05/00	U.S	76.49	76.49	76.49	76.49	76.49	76.49	76.49	76.47	76.47	76.47	76.47	76.47	2.982
	D.S	76.08	76.08	76.08	76.08	76.08	76.08	76.07	76.06	76.06	76.06	76.06	76.06	
	Discharge	0.250	0.250	0.250	0.250	0.250	0.250	0.248	0.247	0.247	0.247	0.247	0.247	
07/06/00	U.S	76.45	76.45	76.45	76.45	76.45	76.45	76.45	76.50	76.50	76.50	76.50	76.50	3.025
	D.S	76.04	76.04	76.04	76.04	76.04	76.04	76.02	76.02	76.17	76.17	76.17	76.17	
	Discharge	0.244	0.244	0.244	0.244	0.244	0.240	0.240	0.265	0.265	0.265	0.265	0.265	
07/07/00	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	3.141
	D.S	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	
	Discharge	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	
07/08/00	U.S	76.56	76.56	76.56	76.56	76.56	76.55	76.55	76.56	76.56	76.56	76.56	76.56	3.225
	D.S	76.19	76.19	76.19	76.19	76.19	76.19	76.19	76.19	76.19	76.19	76.19	76.19	
	Discharge	0.269	0.269	0.269	0.269	0.269	0.269	0.269	0.269	0.269	0.269	0.269	0.269	
07/09/00	U.S	76.57	76.57	76.57	76.57	76.57	76.58	76.59	76.56	76.56	76.56	76.56	76.56	3.215
	D.S	76.20	76.20	76.20	76.20	76.20	76.19	76.18	76.17	76.17	76.17	76.17	76.17	
	Discharge	0.271	0.271	0.271	0.271	0.271	0.269	0.267	0.265	0.265	0.265	0.265	0.265	
07/10/00	U.S	76.58	76.58	76.58	76.58	76.58	76.58	76.59	76.58	76.58	76.58	76.58	76.58	3.261
	D.S	76.20	76.20	76.20	76.20	76.20	76.20	76.23	76.21	76.21	76.21	76.21	76.21	
	Discharge	0.271	0.271	0.271	0.271	0.271	0.271	0.276	0.272	0.272	0.272	0.272	0.272	
07/11/00	U.S	76.46	76.46	76.46	76.46	76.46	76.46	76.46	76.46	76.46	76.46	76.46	76.46	3.257
	D.S	76.21	76.21	76.21	76.21	76.21	76.21	76.20	76.20	76.20	76.20	76.20	76.20	
	Discharge	0.272	0.272	0.272	0.272	0.272	0.272	0.272	0.271	0.271	0.271	0.271	0.271	
07/12/00	U.S	76.49	76.49	76.49	76.49	76.49	76.49	76.49	76.48	76.48	76.48	76.48	76.48	3.174
	D.S	76.17	76.17	76.17	76.17	76.17	76.17	76.17	76.16	76.16	76.16	76.16	76.16	
	Discharge	0.265	0.265	0.265	0.265	0.265	0.265	0.265	0.264	0.264	0.264	0.264	0.264	
07/13/00	U.S	76.52	76.52	76.52	76.52	76.52	76.52	76.53	76.53	76.53	76.53	76.53	76.53	3.225
	D.S	76.19	76.19	76.19	76.19	76.19	76.19	76.19	76.19	76.19	76.19	76.19	76.19	
	Discharge	0.269	0.269	0.269	0.269	0.269	0.269	0.269	0.269	0.269	0.269	0.269	0.269	
07/14/00	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	3.183
	D.S	76.17	76.17	76.17	76.17	76.17	76.17	76.17	76.17	76.17	76.17	76.17	76.17	
	Discharge	0.265	0.265	0.265	0.265	0.265	0.265	0.265	0.265	0.265	0.265	0.265	0.265	

Table 9-3. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	Total
07/15/00	U.S	76.47	76.47	76.47	76.47	76.47	76.47	76.47	76.46	76.46	76.46	76.46	76.46	
	D.S	76.19	76.19	76.19	76.19	76.19	76.19	76.18	76.17	76.17	76.17	76.17	76.17	
	Discharge	0.269	0.269	0.269	0.269	0.269	0.269	0.267	0.265	0.265	0.265	0.265	0.265	3.206
07/16/00	U.S	76.53	76.53	76.53	76.53	76.53	76.51	76.51	76.52	76.52	76.52	76.52	76.52	
	D.S	76.20	76.20	76.20	76.20	76.20	76.20	76.19	76.20	76.20	76.20	76.20	76.20	
	Discharge	0.271	0.271	0.271	0.271	0.271	0.271	0.269	0.271	0.271	0.271	0.271	0.271	3.244
07/17/00	U.S	76.52	76.52	76.52	76.54	76.55	76.55	76.56	76.55	76.55	76.52	76.52	76.51	
	D.S	76.21	76.21	76.21	76.24	76.24	76.23	76.23	76.23	76.22	76.21	76.21	76.20	
	Discharge	0.272	0.272	0.272	0.278	0.278	0.276	0.276	0.276	0.274	0.272	0.272	0.271	3.289
07/18/00	U.S	76.51	76.51	76.51	76.51	76.52	76.52	76.52	76.52	76.53	75.51	76.51	76.50	
	D.S	76.20	76.20	76.20	76.21	76.21	76.21	76.22	76.23	76.23	76.19	76.19	76.19	
	Discharge	0.271	0.271	0.271	0.272	0.272	0.272	0.274	0.276	0.276	0.269	0.269	0.269	3.261
07/19/00	U.S	76.50	76.50	76.50	76.50	76.49	76.48	76.47	76.47	76.48	76.49	76.50	76.50	
	D.S	76.19	76.19	76.19	76.19	76.19	76.19	76.19	76.18	76.17	76.16	76.17	76.17	
	Discharge	0.269	0.269	0.269	0.269	0.269	0.269	0.269	0.267	0.265	0.264	0.265	0.265	3.208
07/20/00	U.S	76.53	76.53	76.53	76.53	76.55	76.57	76.56	76.55	76.55	76.55	76.55	76.55	
	D.S	76.20	76.20	76.20	76.20	76.21	76.21	76.20	76.20	76.20	76.20	76.20	76.20	
	Discharge	0.271	0.271	0.271	0.271	0.272	0.272	0.271	0.271	0.271	0.271	0.271	0.271	3.250
07/21/00	U.S	76.55	76.55	76.55	76.55	76.55	76.54	76.54	76.54	76.55	76.55	76.54	76.54	
	D.S	76.21	76.21	76.21	76.21	76.21	76.20	76.21	76.21	76.20	76.20	76.19	76.19	
	Discharge	0.272	0.272	0.272	0.272	0.272	0.271	0.272	0.272	0.271	0.271	0.269	0.269	3.255
07/22/00	U.S	76.54	76.54	76.54	76.54	76.55	76.55	76.55	76.54	76.54	76.50	76.50	76.50	
	D.S	76.21	76.21	76.21	76.21	76.21	76.20	76.20	76.20	76.20	76.20	76.18	76.18	
	Discharge	0.272	0.272	0.272	0.272	0.272	0.271	0.271	0.271	0.271	0.271	0.267	0.267	3.241
07/23/00	U.S	76.50	76.50	76.50	76.50	76.50	76.54	76.51	76.50	76.50	76.54	76.55	76.56	
	D.S	76.20	76.20	76.20	76.20	76.20	76.15	76.16	76.16	76.14	76.14	76.15	76.15	
	Discharge	0.271	0.271	0.271	0.271	0.271	0.262	0.264	0.264	0.260	0.260	0.262	0.262	3.185
07/24/00	U.S	76.57	76.57	76.57	76.57	76.57	76.57	76.06	76.57	76.57	76.58	76.58	76.58	
	D.S	76.17	76.17	76.17	76.17	76.17	76.17	76.17	76.16	76.16	76.17	76.19	76.19	
	Discharge	0.265	0.265	0.265	0.265	0.265	0.265	0.265	0.264	0.264	0.264	0.265	0.269	3.187
07/25/00	U.S	76.59	76.59	76.59	76.59	76.59	76.56	76.53	76.52	76.51	76.51	76.51	76.51	
	D.S	76.24	76.24	76.24	76.24	76.24	76.23	76.23	76.23	76.22	76.21	76.20	76.20	
	Discharge	0.278	0.278	0.278	0.278	0.278	0.276	0.276	0.276	0.274	0.272	0.271	0.271	3.304
07/26/00	U.S	76.50	76.50	76.50	76.51	76.51	76.50	76.50	76.50	76.51	76.52	76.52	76.52	
	D.S	76.20	76.20	76.20	76.21	76.21	76.21	76.21	76.19	76.18	76.17	76.16	76.17	
	Discharge	0.271	0.271	0.271	0.272	0.272	0.272	0.272	0.269	0.267	0.265	0.264	0.265	3.223
07/27/00	U.S	76.56	76.56	76.56	76.56	76.56	76.56	76.54	76.54	76.54	76.55	76.57	76.57	
	D.S	76.21	76.21	76.21	76.21	76.21	76.21	76.20	76.19	76.18	76.19	76.20	76.20	
	Discharge	0.272	0.272	0.272	0.272	0.272	0.272	0.271	0.269	0.267	0.269	0.271	0.271	3.250
07/28/00	U.S	76.58	76.58	76.58	76.58	76.58	76.58	76.57	76.57	76.56	76.55	76.55	76.54	
	D.S	76.24	76.24	76.24	76.24	76.24	76.22	76.21	76.20	76.19	76.18	76.18	76.18	
	Discharge	0.278	0.278	0.278	0.278	0.278	0.274	0.272	0.271	0.269	0.267	0.267	0.267	3.275
07/29/00	U.S	76.56	76.56	76.56	76.56	76.56	76.56	76.56	76.55	76.55	76.55	76.55	76.55	
	D.S	76.21	76.21	76.21	76.21	76.21	76.21	76.21	76.21	76.21	76.21	76.21	76.21	
	Discharge	0.272	0.272	0.272	0.272	0.272	0.272	0.272	0.272	0.272	0.272	0.272	0.272	3.268
07/30/00	U.S	76.57	76.57	76.57	76.57	76.57	76.57	76.56	76.55	76.55	76.55	76.55	76.56	
	D.S	76.23	76.23	76.23	76.23	76.23	76.23	76.23	76.21	76.20	76.20	76.20	76.20	
	Discharge	0.276	0.276	0.276	0.276	0.276	0.276	0.272	0.271	0.271	0.271	0.271	0.271	3.280
07/31/00	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	
	D.S	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	
	Discharge	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	3.204

Table 9-3. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	Total
08/01/00	U.S	76.59	76.59	76.59	76.59	76.58	76.57	76.55	76.55	76.55	76.54	76.54	76.54	3.316
	D.S	76.23	76.23	76.23	76.23	76.23	76.24	76.24	76.23	76.24	76.23	76.23	76.23	
	Discharge	0.276	0.276	0.276	0.276	0.276	0.278	0.278	0.276	0.278	0.276	0.276	0.276	
08/02/00	U.S	76.55	76.55	76.55	76.55	76.55	76.55	76.54	76.53	76.54	76.54	76.54	76.54	3.298
	D.S	76.23	76.23	76.23	76.23	76.23	76.23	76.22	76.21	76.22	76.22	76.22	76.22	
	Discharge	0.276	0.276	0.276	0.276	0.276	0.276	0.274	0.272	0.274	0.274	0.274	0.274	
08/03/00	U.S	76.56	76.56	76.56	76.56	76.56	76.56	76.56	76.56	76.56	76.56	76.56	76.56	3.333
	D.S	76.24	76.24	76.24	76.24	76.24	76.24	76.24	76.24	76.24	76.24	76.24	76.24	
	Discharge	0.278	0.278	0.278	0.278	0.278	0.278	0.278	0.278	0.278	0.278	0.278	0.278	
08/04/00	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	3.246
	D.S	76.20	76.20	76.20	76.20	76.20	76.20	76.20	76.20	76.20	76.20	76.20	76.20	
	Discharge	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	
08/05/00	U.S	76.54	76.54	76.54	76.54	76.54	76.53	76.52	76.51	76.51	76.52	76.55	76.56	3.287
	D.S	76.23	76.23	76.23	76.23	76.23	76.23	76.22	76.20	76.19	76.21	76.21	76.22	
	Discharge	0.276	0.276	0.276	0.276	0.276	0.276	0.274	0.271	0.269	0.272	0.272	0.274	
08/06/00	U.S	76.58	76.58	76.58	76.59	76.59	76.59	76.59	76.57	76.56	76.55	76.55	76.55	3.263
	D.S	76.22	76.22	76.23	76.23	76.22	76.22	76.21	76.20	76.20	76.19	76.18	76.17	
	Discharge	0.274	0.274	0.276	0.276	0.274	0.274	0.272	0.271	0.271	0.269	0.267	0.265	
08/07/00	U.S	76.54	76.54	76.54	76.53	76.54	76.55	76.55	76.53	76.53	76.53	76.51	76.57	3.190
	D.S	76.17	76.17	76.17	76.18	76.18	76.18	76.17	76.17	76.16	76.17	76.20	76.16	
	Discharge	0.265	0.265	0.265	0.267	0.267	0.267	0.265	0.265	0.264	0.265	0.271	0.264	
08/08/00	U.S	76.59	76.59	76.59	76.59	76.59	76.59	76.58	76.56	76.55	76.55	76.57	76.57	3.213
	D.S	76.20	76.20	76.20	76.20	76.21	76.21	76.19	76.17	76.17	76.17	76.18	76.14	
	Discharge	0.271	0.271	0.271	0.271	0.272	0.272	0.269	0.265	0.265	0.265	0.267	0.260	
08/09/00	U.S	76.57	76.57	76.57	76.57	76.60	76.59	76.60	76.59	76.57	76.57	76.57	76.57	3.174
	D.S	76.16	76.16	76.16	76.16	76.19	76.18	76.17	76.17	76.17	76.16	76.16	76.16	
	Discharge	0.264	0.264	0.264	0.264	0.269	0.267	0.265	0.265	0.265	0.264	0.264	0.264	
08/10/00	U.S	76.53	76.53	76.53	76.53	76.53	76.53	76.52	76.53	76.53	76.56	76.57	76.58	3.006
	D.S	76.11	76.11	76.11	76.11	76.11	76.11	76.09	76.08	76.05	76.05	76.06	76.05	
	Discharge	0.255	0.255	0.255	0.255	0.255	0.252	0.250	0.245	0.245	0.247	0.245	0.247	
08/11/00	U.S	76.58	76.58	76.60	76.61	76.61	76.61	76.59	76.57	76.59	76.59	76.60	76.60	3.000
	D.S	76.07	76.07	76.09	76.11	76.10	76.10	76.07	76.07	76.06	76.07	76.07	76.08	
	Discharge	0.248	0.248	0.252	0.255	0.253	0.253	0.248	0.247	0.247	0.248	0.250	0.250	
08/12/00	U.S	76.60	76.61	76.62	76.63	76.63	76.62	76.59	76.58	76.59	76.59	76.60	76.60	3.014
	D.S	76.09	76.10	76.12	76.12	76.10	76.09	76.07	76.07	76.07	76.07	76.07	76.07	
	Discharge	0.252	0.253	0.257	0.257	0.253	0.252	0.248	0.248	0.248	0.248	0.248	0.248	
08/13/00	U.S	76.60	76.60	76.60	76.60	76.54	76.50	76.53	76.55	76.57	76.56	76.56	76.56	3.007
	D.S	76.07	76.07	76.07	76.07	76.07	76.15	76.13	76.09	76.07	76.07	76.07	76.07	
	Discharge	0.248	0.248	0.248	0.248	0.248	0.262	0.258	0.252	0.248	0.248	0.248	0.248	
08/14/00	U.S	76.54	76.54	76.54	76.56	76.58	76.58	76.55	76.55	76.56	76.55	76.55	76.55	2.981
	D.S	76.07	76.07	76.07	76.07	76.07	76.07	76.07	76.07	76.07	76.07	76.07	76.07	
	Discharge	0.248	0.248	0.248	0.248	0.248	0.248	0.248	0.248	0.248	0.248	0.248	0.248	
08/15/00	U.S	76.54	76.54	76.54	76.54	76.55	76.55	76.54	76.54	76.54	76.55	76.55	76.55	2.971
	D.S	76.06	76.06	76.06	76.06	76.07	76.07	76.07	76.06	76.06	76.07	76.07	76.07	
	Discharge	0.247	0.247	0.247	0.247	0.247	0.248	0.248	0.247	0.247	0.248	0.248	0.248	
08/16/00	U.S	76.57	76.57	76.57	76.57	76.54	76.53	76.49	76.49	76.49	76.49	76.50	76.50	3.061
	D.S	76.08	76.08	76.08	76.08	76.16	76.17	76.16	76.13	76.11	76.10	76.08	76.09	
	Discharge	0.250	0.250	0.250	0.250	0.264	0.265	0.264	0.258	0.255	0.253	0.250	0.252	
08/17/00	U.S	76.51	76.51	76.51	76.51	76.56	76.55	76.52	76.51	76.51	76.50	76.50	76.51	3.050
	D.S	76.10	76.10	76.10	76.10	76.13	76.12	76.11	76.11	76.11	76.09	76.09	76.10	
	Discharge	0.253	0.253	0.253	0.253	0.258	0.257	0.255	0.255	0.255	0.252	0.252	0.253	

Table 9-3. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	Total
08/18/00	U.S	76.52	76.52	76.52	76.52	76.54	76.53	76.51	76.49	76.50	76.50	76.51	76.51	
	D.S	76.11	76.11	76.11	76.11	76.13	76.13	76.11	76.09	76.09	76.09	76.09	76.10	
	Discharge	0.255	0.255	0.255	0.255	0.258	0.258	0.255	0.252	0.252	0.252	0.252	0.253	3.052
08/19/00	U.S	76.51	76.51	76.51	76.51	76.51	76.51	76.49	76.48	76.49	76.52	76.53	76.54	
	D.S	76.10	76.10	76.10	76.11	76.11	76.11	76.10	76.09	76.09	76.10	76.08	76.07	
	Discharge	0.253	0.253	0.253	0.255	0.255	0.255	0.253	0.252	0.252	0.253	0.250	0.248	3.033
08/20/00	U.S	76.54	76.54	76.52	76.52	76.52	76.52	76.55	76.57	76.59	76.57	76.57	75.58	
	D.S	76.06	76.06	76.06	76.06	76.06	76.05	76.05	76.05	76.07	76.07	76.08	76.07	
	Discharge	0.247	0.247	0.247	0.247	0.247	0.245	0.245	0.245	0.248	0.248	0.250	0.248	2.964
08/21/00	U.S	75.58	75.58	75.60	75.60	75.58	75.58	75.55	75.53	75.55	75.57	75.59	76.56	
	D.S	76.10	76.10	76.10	76.10	76.10	76.10	76.10	76.10	76.10	76.10	76.10	76.10	
	Discharge	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	0.253	3.040
08/22/00	U.S	76.58	76.58	76.59	76.59	76.59	76.60	76.59	76.61	76.59	76.58	76.58	76.58	
	D.S	76.05	76.06	76.06	76.06	76.09	76.08	76.09	76.10	76.09	76.08	76.08	76.08	
	Discharge	0.245	0.247	0.247	0.252	0.250	0.252	0.253	0.252	0.252	0.250	0.250	0.250	2.994
08/23/00	U.S	76.53	76.54	76.54	76.54	76.54	76.55	76.55	76.55	76.55	76.55	76.58	76.57	
	D.S	76.05	76.05	76.05	76.05	76.07	76.06	76.05	76.05	76.04	76.04	76.05	76.05	
	Discharge	0.245	0.245	0.245	0.245	0.248	0.247	0.245	0.245	0.244	0.244	0.245	0.245	2.943
08/24/00	U.S	76.57	76.57	76.57	76.57	76.57	76.60	76.58	76.55	76.55	76.58	76.58	76.60	
	D.S	76.05	76.05	76.05	76.05	76.05	76.05	76.06	76.05	76.07	76.09	76.09	76.09	
	Discharge	0.245	0.245	0.245	0.245	0.245	0.245	0.247	0.245	0.248	0.252	0.252	0.252	2.966
08/25/00	U.S	76.62	76.62	76.62	76.62	76.62	76.53	76.51	76.49	76.51	76.54	76.55	76.55	
	D.S	76.08	76.10	76.10	76.10	76.21	76.21	76.18	76.15	76.12	76.10	76.10	76.09	
	Discharge	0.250	0.253	0.253	0.253	0.272	0.272	0.267	0.262	0.257	0.253	0.253	0.252	3.098
08/26/00	U.S	76.56	76.56	76.56	76.56	76.56	76.58	76.58	76.56	76.56	76.55	76.55	76.55	
	D.S	76.11	76.11	76.11	76.11	76.11	76.11	76.12	76.11	76.10	76.10	76.09	76.09	
	Discharge	0.255	0.255	0.255	0.255	0.255	0.255	0.257	0.255	0.253	0.253	0.252	0.252	3.052
08/27/00	U.S	76.58	76.58	76.58	76.58	76.58	76.59	76.58	76.57	76.58	76.57	76.58	76.57	
	D.S	76.12	76.12	76.12	76.12	76.12	76.13	76.12	76.12	76.12	76.12	76.12	76.11	
	Discharge	0.257	0.257	0.257	0.257	0.258	0.257	0.257	0.257	0.257	0.257	0.257	0.255	3.080
08/28/00	U.S	76.58	76.58	76.58	76.58	76.58	76.59	76.58	76.57	76.58	76.57	76.58	76.57	
	D.S	76.12	76.12	76.12	76.12	76.12	76.13	76.12	76.12	76.12	76.12	76.12	76.11	
	Discharge	0.257	0.257	0.257	0.257	0.267	0.265	0.262	0.260	0.257	0.257	0.257	0.257	3.111
08/29/00	U.S	76.57	76.57	76.57	76.57	76.52	76.52	76.51	76.51	76.51	76.51	76.52	76.52	
	D.S	76.12	76.12	76.12	76.12	76.18	76.17	76.15	76.14	76.12	76.12	76.12	76.14	
	Discharge	0.257	0.257	0.257	0.257	0.267	0.265	0.262	0.260	0.257	0.257	0.257	0.260	3.114
08/30/00	U.S	76.52	76.52	76.52	76.52	76.52	76.52	76.52	76.51	76.51	76.51	76.51	76.51	
	D.S	76.12	76.12	76.13	76.13	76.13	76.13	76.13	76.14	76.14	76.14	76.14	76.14	
	Discharge	0.257	0.257	0.258	0.258	0.258	0.258	0.258	0.260	0.260	0.260	0.260	0.260	3.106
08/31/00	U.S	76.55	76.54	76.53	76.53	76.54	76.53	76.51	76.50	76.51	76.51	76.52	76.53	
	D.S	76.16	76.16	76.17	76.17	76.18	76.16	76.14	76.13	76.13	76.12	76.11	76.12	
	Discharge	0.264	0.264	0.265	0.265	0.267	0.264	0.260	0.258	0.258	0.258	0.255	0.257	3.130
09/01/00	U.S	76.53	76.53	76.54	76.54	76.56	76.58	76.55	76.53	76.53	76.52	76.53	76.54	
	D.S	76.12	76.12	76.13	76.13	76.13	76.14	76.14	76.13	76.13	76.12	76.09	76.10	
	Discharge	0.257	0.257	0.258	0.258	0.258	0.260	0.260	0.258	0.258	0.258	0.253	0.253	3.082
09/02/00	U.S	76.59	76.59	76.59	76.59	76.60	76.60	76.60	76.59	76.59	76.59	76.58	76.58	
	D.S	76.12	76.12	76.12	76.14	76.14	76.13	76.13	76.13	76.12	76.20	76.13	76.13	
	Discharge	0.257	0.257	0.257	0.260	0.260	0.258	0.258	0.258	0.257	0.271	0.258	0.258	3.109
09/03/00	U.S	76.59	76.60	76.60	76.61	76.54	76.53	76.51	76.51	76.50	76.50	76.49	76.52	
	D.S	76.13	76.15	76.15	76.16	76.13	76.21	76.18	76.17	76.17	76.16	76.15	76.15	
	Discharge	0.258	0.262	0.262	0.264	0.258	0.272	0.267	0.267	0.265	0.265	0.264	0.262	3.161

Table 9-3. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	Total
09/04/00	U.S	76.49	76.49	76.48	76.47	76.48	76.50	76.50	76.51	76.51	76.53	76.53	76.54	3.099
	D.S	76.14	76.14	76.14	76.13	76.12	76.12	76.11	76.11	76.12	76.13	76.14	76.15	
	Discharge	0.260	0.260	0.260	0.258	0.257	0.257	0.255	0.255	0.257	0.258	0.260	0.262	
09/05/00	U.S	76.55	76.54	76.55	76.56	76.56	76.56	76.55	76.56	76.55	76.58	76.58	76.57	3.148
	D.S	76.14	76.15	76.15	76.16	76.15	76.15	76.15	76.15	76.15	76.16	76.16	76.17	
	Discharge	0.260	0.262	0.262	0.264	0.262	0.262	0.262	0.262	0.262	0.264	0.264	0.265	
09/06/00	U.S	76.57	76.57	76.57	76.58	76.53	76.52	76.51	76.51	76.51	76.51	76.50	76.50	3.241
	D.S	76.18	76.17	76.19	76.19	76.23	76.24	76.23	76.22	76.20	76.18	76.17	76.17	
	Discharge	0.267	0.265	0.269	0.269	0.276	0.278	0.276	0.274	0.271	0.267	0.265	0.265	
09/07/00	U.S	76.49	76.48	76.48	76.49	76.50	76.51	76.50	76.50	76.50	76.50	76.50	76.50	3.176
	D.S	76.16	76.17	76.18	76.18	76.18	76.17	76.16	76.16	76.16	76.16	76.16	76.16	
	Discharge	0.264	0.265	0.267	0.267	0.267	0.265	0.264	0.264	0.264	0.264	0.264	0.264	
09/08/00	U.S	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	3.204
	D.S	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	
	Discharge	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	
09/09/00	U.S	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	3.204
	D.S	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	
	Discharge	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	
09/10/00	U.S	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	3.204
	D.S	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	
	Discharge	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	
09/11/00	U.S	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	3.218
	D.S	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	
	Discharge	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	
09/13/00	U.S	76.50	76.50	76.51	76.52	76.52	76.53	76.54	76.51	76.51	76.50	76.49	76.49	3.253
	D.S	76.20	76.20	76.20	76.21	76.21	76.21	76.21	76.21	76.21	76.20	76.20	76.19	
	Discharge	0.271	0.271	0.271	0.272	0.272	0.272	0.272	0.272	0.271	0.271	0.271	0.269	
09/14/00	U.S	76.49	76.49	76.49	76.49	76.49	76.49	76.49	76.49	76.49	76.49	76.48	76.48	3.245
	D.S	76.19	76.20	76.20	76.20	76.20	76.20	76.20	76.20	76.21	76.21	76.20	76.19	
	Discharge	0.269	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.272	0.271	0.271	
09/15/00	U.S	76.48	76.49	76.50	76.51	76.52	76.52	76.53	76.54	76.53	76.51	76.49	76.48	3.270
	D.S	76.19	76.20	76.21	76.21	76.22	76.22	76.23	76.23	76.23	76.22	76.21	76.20	
	Discharge	0.269	0.271	0.272	0.272	0.274	0.274	0.276	0.276	0.274	0.272	0.271	0.269	
09/16/00	U.S	76.48	76.48	76.48	76.48	76.48	76.48	76.48	76.48	76.48	76.48	76.50	76.50	3.225
	D.S	76.19	76.19	76.19	76.19	76.20	76.20	76.19	76.19	76.19	76.19	76.18	76.18	
	Discharge	0.269	0.269	0.269	0.269	0.271	0.271	0.269	0.269	0.269	0.269	0.267	0.267	
09/17/00	U.S	76.51	76.52	76.52	76.53	76.53	76.53	76.53	76.53	76.53	76.55	76.55	76.56	3.234
	D.S	76.18	76.18	76.19	76.19	76.19	76.20	76.19	76.20	76.20	76.20	76.21	76.20	
	Discharge	0.267	0.267	0.269	0.269	0.269	0.271	0.271	0.269	0.271	0.271	0.272	0.271	
09/18/00	U.S	76.56	76.54	76.54	76.54	76.49	76.49	76.48	76.48	76.48	76.48	76.46	76.47	3.252
	D.S	76.20	76.19	76.21	76.20	76.27	76.25	76.22	76.20	76.19	76.18	76.16	76.16	
	Discharge	0.271	0.269	0.272	0.271	0.283	0.280	0.274	0.271	0.269	0.267	0.264	0.264	
09/19/00	U.S	76.47	76.49	76.49	76.54	76.55	76.55	76.54	76.52	76.51	76.50	76.48	76.47	3.257
	D.S	76.16	76.17	76.19	76.20	76.21	76.24	76.23	76.22	76.22	76.21	76.21	76.20	
	Discharge	0.264	0.265	0.269	0.271	0.272	0.278	0.276	0.274	0.274	0.272	0.272	0.271	
09/20/00	U.S	76.46	76.46	76.47	76.47	76.47	76.47	76.47	76.47	76.47	76.47	76.47	76.47	3.261
	D.S	76.19	76.19	76.21	76.21	76.21	76.21	76.21	76.21	76.21	76.21	76.21	76.21	
	Discharge	0.269	0.269	0.272	0.272	0.272	0.272	0.272	0.272	0.272	0.272	0.272	0.272	

Table 9-3. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	Total
09/21/00	U.S	76.48	76.48	76.48	76.48	76.48	76.48	76.49	76.49	76.48	76.48	76.48	76.48	
	D.S	76.22	76.22	76.22	76.22	76.22	76.20	76.20	76.18	76.19	76.20	76.20	76.20	
	Discharge	0.274	0.274	0.274	0.274	0.274	0.271	0.271	0.267	0.269	0.271	0.271	0.271	3.259
09/22/00	U.S	76.49	76.49	76.49	76.50	76.50	76.51	76.51	76.50	76.49	76.48	76.47	76.46	
	D.S	76.20	76.21	76.21	76.22	76.22	76.21	76.21	76.21	76.20	76.19	76.19	76.18	
	Discharge	0.271	0.272	0.272	0.274	0.274	0.272	0.272	0.272	0.271	0.269	0.269	0.267	3.255
09/23/00	U.S	76.46	76.46	76.47	76.47	76.48	76.46	76.46	76.46	76.46	76.46	76.46	76.46	
	D.S	76.18	76.19	76.20	76.21	76.21	76.23	76.23	76.23	76.23	76.23	76.23	76.23	
	Discharge	0.267	0.269	0.271	0.272	0.272	0.276	0.276	0.276	0.276	0.276	0.276	0.276	3.282
09/24/00	U.S	76.41	76.41	76.39	76.38	76.44	76.57	76.59	76.59	76.59	76.59	76.59	76.59	
	D.S	76.20	76.18	76.18	76.18	76.11	76.18	76.20	76.22	76.22	76.22	76.22	76.22	
	Discharge	0.271	0.267	0.267	0.267	0.255	0.267	0.271	0.274	0.274	0.274	0.274	0.274	3.234
09/25/00	U.S	76.59	76.59	76.59	76.59	76.59	76.59	76.57	76.57	76.56	76.56	76.54	76.54	
	D.S	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	
	Discharge	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	3.141
09/26/00	U.S	76.54	76.54	76.54	76.54	76.54	76.54	76.53	76.53	76.53	76.53	76.53	76.53	
	D.S	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	
	Discharge	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	3.141
09/27/00	U.S	76.55	76.55	76.55	76.55	76.55	76.55	76.54	76.54	76.54	76.54	76.54	76.54	
	D.S	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	
	Discharge	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	3.141
09/28/00	U.S	76.55	76.55	76.55	76.57	76.57	76.58	76.58	76.58	76.58	76.58	76.58	76.58	
	D.S	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	
	Discharge	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	3.141
09/29/00	U.S	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	76.55	
	D.S	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	
	Discharge	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	3.141
09/30/00	U.S	76.54	76.54	76.54	76.54	76.54	76.54	76.52	76.50	76.51	76.49	76.49	76.50	
	D.S	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	
	Discharge	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	3.141
10/01/00	U.S	76.49	76.49	76.49	76.48	76.48	76.51	76.51	76.50	76.51	76.51	76.51	76.51	
	D.S	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	
	Discharge	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	3.141
10/02/00	U.S	76.50	76.51	76.51	76.51	76.53	76.53	76.53	76.53	76.53	76.53	76.53	76.55	
	D.S	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	
	Discharge	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	3.141
10/03/00	U.S	76.57	76.57	76.57	76.58	76.58	76.53	76.53	76.53	76.53	76.53	76.54	76.54	
	D.S	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	
	Discharge	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	0.262	3.141
10/04/00	U.S	76.56	76.56	76.57	76.58	76.55	76.55	76.53	76.53	76.53	76.53	76.54	76.56	
	D.S	76.20	76.20	76.20	76.20	76.20	76.20	76.20	76.20	76.20	76.20	76.20	76.20	
	Discharge	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	3.246
10/05/00	U.S	76.56	76.57	76.58	76.59	76.59	76.60	76.60	76.60	76.60	76.59	76.58	76.57	
	D.S	76.20	76.20	76.20	76.20	76.20	76.20	76.20	76.20	76.20	76.20	76.20	76.20	
	Discharge	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	3.246
10/06/00	U.S	76.56	76.55	76.55	76.55	76.52	76.51	76.50	76.51	76.50	76.48	76.47	76.47	
	D.S	76.20	76.20	76.20	76.20	76.20	76.20	76.20	76.20	76.20	76.20	76.20	76.20	
	Discharge	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	3.246
10/07/00	U.S	74.48	76.49	76.50	76.51	76.51	76.51	76.52	76.51	76.49	76.48	76.48	76.49	
	D.S	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.18	
	Discharge	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.267	3.204
10/08/00	U.S	76.50	76.50	76.50	76.51	76.50	76.51	76.52	76.52	76.51	76.51	76.49	76.49	
	D.S	76.20	76.20	76.20	76.20	76.20	76.20	76.20	76.20	76.20	76.20	76.20	76.20	
	Discharge	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	0.271	3.246
10/09/00	U.S	76.49	76.51	76.51	76.52	76.48	76.50	76.50	76.50	76.48	76.48	76.48	76.48	
	D.S	76.05	76.05	76.06	76.06	76.10	76.09	76.08	76.06	76.06	76.06	76.05	76.06	
	Discharge	0.245	0.245	0.247	0.247	0.253	0.252	0.250	0.247	0.247	0.247	0.245	0.247	2.971
10/10/00	U.S	76.50	76.51	76.52	76.53	76.52	76.53	76.55	76.54	76.54	76.53	76.52	76.52	
	D.S	76.06	76.07	76.07	76.08	76.10	76.11	76.20	76.20	76.20	76.20	76.19	76.19	
	Discharge	0.247	0.248	0.248	0.250	0.253	0.255	0.271	0.271	0.271	0.271	0.269	0.269	3.121
10/11/00	U.S	76.51	76.51	76.51	76.51	76.50	76.51	76.52	76.52	76.53	76.53	76.51	76.50	
	D.S	76.19	76.19	76.19	76.20	76.20	76.19	76.20	76.20	76.20	76.18	76.19	76.19	
	Discharge	0.269	0.269	0.269	0.271	0.271	0.269	0.271	0.271	0.271	0.267	0.269	0.269	3.232

Table 9-3. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	Total
10/12/00	U.S	76.50	76.49	76.49	76.48	76.47	76.47	76.47	76.48	76.48	76.47	76.47	76.48	3.161
	D.S	76.18	76.18	76.18	76.18	76.17	76.17	76.16	76.14	76.14	76.14	76.13	76.14	
	Discharge	0.267	0.267	0.267	0.267	0.265	0.265	0.264	0.260	0.260	0.260	0.258	0.260	
10/13/00	U.S	76.49	76.50	76.50	76.51	76.51	76.51	76.50	76.49	76.49	76.49	76.48	76.47	3.192
	D.S	76.15	76.16	76.15	76.17	76.20	76.19	76.18	76.17	76.18	76.18	76.18	76.18	
	Discharge	0.262	0.264	0.262	0.265	0.271	0.269	0.267	0.265	0.267	0.267	0.267	0.267	
10/14/00	U.S	76.45	76.45	76.45	76.44	76.44	76.44	76.55	76.54	76.54	76.53	76.52	76.51	3.197
	D.S	76.17	76.18	76.18	76.18	76.19	76.18	76.17	76.18	76.17	76.17	76.18	76.17	
	Discharge	0.265	0.267	0.267	0.267	0.269	0.267	0.265	0.267	0.265	0.265	0.267	0.265	
10/15/00	U.S	76.50	76.48	76.47	76.47	76.47	76.50	76.50	76.53	76.55	76.56	76.56	76.57	3.128
	D.S	76.17	76.16	76.16	76.16	76.15	76.12	76.10	76.10	76.13	76.14	76.16	76.17	
	Discharge	0.265	0.264	0.264	0.264	0.262	0.257	0.253	0.253	0.258	0.260	0.264	0.265	
10/16/00	U.S	76.58	76.59	76.60	76.53	76.60	76.57	76.54	76.52	76.50	76.52	76.51	76.50	3.325
	D.S	76.19	76.21	76.21	76.25	76.30	76.32	76.30	76.27	76.24	76.19	76.18	76.17	
	Discharge	0.269	0.272	0.272	0.280	0.289	0.293	0.289	0.283	0.278	0.269	0.267	0.265	
10/17/00	U.S	76.50	76.50	76.53	76.53	76.55	76.56	76.57	76.57	76.57	76.57	76.56	76.56	3.271
	D.S	76.19	76.19	76.20	76.22	76.23	76.23	76.22	76.22	76.21	76.21	76.21	76.21	
	Discharge	0.269	0.269	0.271	0.274	0.276	0.276	0.274	0.274	0.272	0.272	0.272	0.272	
10/18/00	U.S	76.56	76.56	76.56	76.56	76.55	76.54	76.54	76.52	76.51	76.49	76.49	76.47	3.326
	D.S	76.22	76.22	76.23	76.23	76.27	76.27	76.26	76.24	76.24	76.23	76.22	76.21	
	Discharge	0.274	0.274	0.276	0.276	0.283	0.283	0.281	0.278	0.278	0.276	0.274	0.272	
10/19/00	U.S	76.48	76.49	76.50	76.50	76.50	76.49	76.50	76.49	76.53	76.53	76.52	76.52	3.207
	D.S	76.21	76.21	76.21	76.21	76.21	76.21	76.21	76.20	76.14	76.12	76.12	76.12	
	Discharge	0.272	0.272	0.272	0.272	0.272	0.272	0.272	0.271	0.260	0.257	0.257	0.257	
10/20/00	U.S	76.51	76.51	76.51	76.50	76.50	76.51	76.50	76.46	76.44	76.46	76.45	76.45	3.072
	D.S	76.12	76.13	76.13	76.13	76.13	76.13	76.12	76.12	76.10	76.09	76.09	76.10	
	Discharge	0.257	0.258	0.258	0.258	0.258	0.258	0.257	0.257	0.253	0.252	0.252	0.253	
10/21/00	U.S	76.45	76.45	76.44	76.44	76.44	76.48	76.45	76.43	76.42	76.39	76.39	76.39	3.097
	D.S	76.11	76.13	76.16	76.14	76.14	76.14	76.13	76.11	76.12	76.12	76.12	76.12	
	Discharge	0.255	0.258	0.264	0.260	0.260	0.260	0.258	0.255	0.257	0.257	0.257	0.257	
10/22/00	U.S	76.35	76.35	76.34	76.35	76.35	76.33	76.32	76.34	76.35	76.37	76.38	76.41	3.059
	D.S	76.13	76.13	76.13	76.15	76.15	76.14	76.11	76.11	76.08	76.05	76.06	76.07	
	Discharge	0.258	0.258	0.258	0.262	0.262	0.260	0.255	0.255	0.250	0.245	0.247	0.248	
10/23/00	U.S	76.42	76.44	76.44	76.49	76.49	76.48	76.42	76.39	76.37	73.35	76.34	76.32	3.079
	D.S	76.10	76.10	76.11	76.11	76.14	76.14	76.16	76.15	76.10	76.11	76.11	76.10	
	Discharge	0.253	0.253	0.255	0.255	0.260	0.260	0.264	0.262	0.253	0.255	0.255	0.253	
10/24/00	U.S	76.34	76.34	76.34	76.34	76.34	76.33	76.32	76.30	76.31	76.33	76.34	76.34	3.095
	D.S	76.13	76.13	76.13	76.13	76.13	76.12	76.12	76.11	76.11	76.13	76.14	76.15	
	Discharge	0.258	0.258	0.258	0.258	0.258	0.257	0.257	0.255	0.255	0.258	0.260	0.262	
10/25/00	U.S	76.33	76.33	76.30	76.37	76.36	76.42	76.55	76.53	76.50	76.50	76.56	76.57	3.185
	D.S	76.17	76.17	76.17	76.17	76.20	76.19	76.19	76.19	76.16	76.14	76.15	76.15	
	Discharge	0.265	0.265	0.265	0.265	0.271	0.269	0.269	0.269	0.264	0.260	0.262	0.262	
10/26/00	U.S	76.58	76.58	76.59	76.58	76.58	76.53	76.53	76.50	76.48	76.48	76.46	76.44	3.243
	D.S	76.16	76.16	76.19	76.20	76.20	76.20	76.22	76.22	76.21	76.22	76.20	76.20	
	Discharge	0.264	0.264	0.269	0.271	0.271	0.271	0.274	0.274	0.272	0.274	0.271	0.271	
10/27/00	U.S	76.43	76.42	76.42	76.45	76.45	76.48	76.48	76.48	76.49	76.49	76.49	76.48	3.216
	D.S	76.20	76.20	76.20	76.20	76.18	76.19	76.18	76.18	76.17	76.17	76.17	76.19	
	Discharge	0.271	0.271	0.271	0.271	0.267	0.269	0.267	0.267	0.265	0.265	0.265	0.269	
10/28/00	U.S	76.50	76.40	76.49	76.49	76.50	76.51	76.49	76.48	76.48	76.46	76.44	76.43	3.213
	D.S	76.19	76.19	76.19	76.19	76.20	76.20	76.19	76.19	76.18	76.18	76.16	76.15	
	Discharge	0.269	0.269	0.269	0.269	0.271	0.271	0.269	0.269	0.267	0.267	0.264	0.262	
10/29/00	U.S	76.45	76.45	76.46	76.48	76.50	76.43	76.43	76.43	76.43	76.40	76.40	76.39	3.231
	D.S	76.16	76.16	76.16	76.18	76.19	76.19	76.19	76.22	76.22	76.22	76.21	76.21	
	Discharge	0.264	0.264	0.264	0.267	0.269	0.269	0.269	0.274	0.274	0.274	0.272	0.272	

Table 9-3. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	Total
10/30/00	U.S	76.46	76.43	76.42	76.41	76.41	76.45	76.45	76.47	76.48	76.49	76.50	76.51	
	D.S	76.21	76.20	76.20	76.20	76.20	76.17	76.16	76.15	76.14	76.14	76.20	76.16	
	Discharge	0.272	0.271	0.271	0.271	0.271	0.265	0.264	0.262	0.260	0.260	0.271	0.264	3.199
10/31/00	U.S	76.46	76.43	76.42	76.41	76.41	76.45	76.45	76.47	76.48	76.49	76.50	76.51	
	D.S	76.21	76.20	76.20	76.20	76.20	76.17	76.16	76.15	76.14	76.14	76.20	76.16	
	Discharge	0.272	0.271	0.271	0.271	0.271	0.265	0.264	0.262	0.260	0.260	0.271	0.264	3.199
11/01/00	U.S	76.57	76.57	76.57	76.57	76.57	76.57	76.56	76.54	76.54	76.54	76.49	76.49	
	D.S	76.24	76.24	76.24	76.24	76.24	76.24	76.23	76.23	76.22	76.22	76.22	76.22	
	Discharge	0.278	0.278	0.278	0.278	0.278	0.278	0.276	0.276	0.274	0.274	0.274	0.274	3.314
11/02/00	U.S	76.48	76.47	76.47	76.44	76.43	76.42	76.40	76.39	76.38	76.35	76.35	76.37	
	D.S	76.19	76.18	76.18	76.18	76.18	76.19	76.20	76.21	76.20	76.20	76.21	76.22	
	Discharge	0.269	0.267	0.267	0.267	0.267	0.269	0.271	0.272	0.271	0.271	0.272	0.274	3.236
11/03/00	U.S	76.37	76.36	76.36	76.34	76.32	76.31	76.31	76.31	76.31	76.31	76.31	76.40	
	D.S	76.19	76.19	76.18	76.18	76.17	76.18	76.17	76.19	76.19	76.19	76.19	76.19	
	Discharge	0.269	0.269	0.267	0.267	0.265	0.267	0.265	0.269	0.269	0.269	0.269	0.269	3.213
11/04/00	U.S	76.41	76.39	76.40	76.39	76.37	76.37	76.40	76.40	76.39	76.36	76.45	76.45	
	D.S	76.18	76.18	76.18	76.18	76.18	76.18	76.18	76.17	76.17	76.17	76.15	76.14	
	Discharge	0.267	0.267	0.267	0.267	0.267	0.267	0.267	0.265	0.265	0.265	0.262	0.260	3.187
11/05/00	U.S	76.45	76.45	76.46	76.49	76.50	76.50	76.50	76.49	76.46	76.43	76.43	76.41	
	D.S	76.14	76.13	76.13	76.12	76.11	76.11	76.11	76.12	76.11	76.11	76.10	76.09	
	Discharge	0.260	0.258	0.258	0.257	0.255	0.255	0.255	0.257	0.255	0.255	0.253	0.252	3.070
11/06/00	U.S	76.39	76.37	76.37	76.38	76.48	76.55	76.57	76.63	76.62	76.63	76.65	76.61	
	D.S	76.08	76.07	76.06	76.05	76.04	75.98	75.96	76.03	76.04	76.04	76.05	76.06	
	Discharge	0.250	0.248	0.247	0.245	0.244	0.234	0.231	0.242	0.244	0.244	0.245	0.247	2.920
11/07/00	U.S	76.60	76.60	76.59	76.60	76.59	76.58	76.57	76.53	76.52	76.52	76.52	76.52	
	D.S	76.10	76.10	76.10	76.10	76.10	76.09	76.09	76.09	76.09	76.08	76.08	76.08	
	Discharge	0.253	0.253	0.253	0.253	0.253	0.252	0.252	0.252	0.252	0.250	0.250	0.250	3.023
11/08/00	U.S	76.61	76.61	76.61	76.61	76.62	76.62	76.65	76.65	76.66	76.67	76.67	76.67	
	D.S	76.06	76.06	76.06	76.06	76.06	76.06	76.06	76.06	76.06	76.06	76.06	76.06	
	Discharge	0.247	0.247	0.247	0.247	0.247	0.247	0.247	0.247	0.247	0.247	0.247	0.247	2.961
11/09/00	U.S	76.67	76.67	76.67	76.68	76.68	76.69	76.70	76.69	76.72	76.74	76.74	76.75	
	D.S	76.07	76.07	76.07	76.07	76.08	76.08	76.07	76.07	76.05	76.05	76.05	76.06	
	Discharge	0.248	0.248	0.248	0.248	0.250	0.250	0.248	0.248	0.245	0.245	0.245	0.247	2.973
11/10/00	U.S	76.80	76.79	76.79	76.78	76.74	76.74	76.71	76.70	76.69	76.68	76.66	76.67	
	D.S	76.09	76.09	76.09	76.09	76.09	76.09	76.09	76.09	76.09	76.09	76.09	76.09	
	Discharge	0.252	0.252	0.252	0.252	0.252	0.252	0.252	0.252	0.252	0.252	0.252	0.252	3.020
11/11/00	U.S	76.80	76.79	76.79	76.78	76.74	76.74	76.71	76.71	76.70	76.68	76.66	76.67	
	D.S	76.09	76.09	76.09	76.09	76.12	76.13	76.10	76.09	76.06	76.06	76.05	76.04	
	Discharge	0.252	0.252	0.252	0.252	0.257	0.258	0.253	0.252	0.247	0.247	0.245	0.244	3.009
11/12/00	U.S	76.66	76.69	76.71	76.71	76.76	76.74	76.73	76.73	76.76	76.76	76.78	76.78	
	D.S	76.04	76.05	76.07	76.08	76.08	76.08	76.07	76.05	76.05	76.03	76.02	76.01	
	Discharge	0.244	0.245	0.248	0.250	0.250	0.250	0.248	0.245	0.245	0.242	0.240	0.239	2.947
11/13/00	U.S	76.79	76.79	76.80	76.80	76.79	76.78	76.77	76.76	76.75	76.74	76.73	76.76	
	D.S	76.01	76.03	76.03	76.06	76.06	76.07	76.07	76.06	76.06	76.05	76.06	76.07	
	Discharge	0.239	0.242	0.242	0.247	0.247	0.248	0.248	0.247	0.247	0.245	0.247	0.248	2.947
11/14/00	U.S	76.76	76.78	76.78	76.78	76.77	76.76	76.75	76.72	76.71	76.69	76.68	76.67	
	D.S	76.08	76.09	76.09	76.09	76.10	76.11	76.10	76.09	76.06	76.05	76.04	76.03	
	Discharge	0.250	0.252	0.252	0.252	0.253	0.255	0.253	0.252	0.247	0.245	0.244	0.242	2.996
11/15/00	U.S	76.66	76.69	76.70	76.70	76.70	76.70	76.55	76.56	76.55	76.53	76.52	76.52	
	D.S	76.03	76.03	76.03	76.04	76.05	76.04	76.05	76.06	76.06	76.07	76.07	76.07	
	Discharge	0.242	0.242	0.242	0.244	0.245	0.244	0.245	0.247	0.247	0.248	0.248	0.248	2.942

Table 9-3. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	Total
11/16/00	U.S	76.52	76.51	76.50	76.50	76.49	76.49	76.45	76.45	76.45	76.46	76.47	76.48	2.937
	D.S	76.07	76.07	76.08	76.07	76.06	76.06	76.04	76.04	76.02	76.02	76.02	76.02	
	Discharge	0.248	0.248	0.250	0.248	0.247	0.247	0.244	0.244	0.240	0.240	0.240	0.240	
11/17/00	U.S	76.51	76.49	76.46	76.42	76.41	76.45	76.50	76.54	76.54	76.54	76.55	76.55	2.878
	D.S	76.03	76.03	76.03	76.03	76.01	75.99	75.98	75.99	76.00	76.03	76.04	76.04	
	Discharge	0.242	0.242	0.242	0.242	0.239	0.236	0.234	0.236	0.237	0.242	0.244	0.244	
11/18/00	U.S	76.63	76.63	76.63	76.63	76.58	76.55	76.53	76.50	76.46	76.48	76.49	76.50	3.031
	D.S	76.10	76.10	76.10	76.11	76.16	76.16	76.13	76.11	76.09	76.04	76.02	76.02	
	Discharge	0.253	0.253	0.253	0.255	0.264	0.264	0.258	0.255	0.252	0.244	0.240	0.240	
11/19/00	U.S	76.50	76.49	76.49	76.49	76.49	76.50	76.50	76.48	76.51	76.51	76.49	76.49	2.881
	D.S	76.01	76.01	76.02	76.01	76.02	76.04	76.04	76.02	76.02	76.02	76.01	76.00	
	Discharge	0.239	0.239	0.240	0.239	0.240	0.244	0.244	0.240	0.240	0.240	0.239	0.237	
11/20/00	U.S	76.48	76.48	76.49	76.50	76.46	76.44	76.42	76.42	76.41	76.41	76.40	76.39	2.920
	D.S	76.00	76.00	76.01	76.02	76.06	76.07	76.06	76.06	76.04	76.04	76.05	76.05	
	Discharge	0.237	0.237	0.239	0.240	0.247	0.248	0.247	0.247	0.244	0.244	0.245	0.245	
11/21/00	U.S	76.46	76.47	76.49	76.49	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.974
	D.S	76.05	76.06	76.06	76.07	76.07	76.07	76.07	76.07	76.07	76.07	76.07	76.07	
	Discharge	0.245	0.247	0.247	0.248	0.248	0.248	0.248	0.248	0.248	0.248	0.248	0.248	
11/22/00	U.S	76.51	76.51	76.52	76.53	76.53	76.54	76.53	76.54	76.56	76.54	76.54	76.54	2.992
	D.S	76.07	76.09	76.10	76.10	76.11	76.08	76.07	76.06	76.07	76.07	76.06	76.05	
	Discharge	0.248	0.252	0.253	0.253	0.255	0.250	0.248	0.247	0.247	0.247	0.245	0.245	
11/23/00	U.S	76.54	76.54	76.56	76.57	76.57	76.57	76.56	76.55	76.54	76.53	76.53	76.53	2.960
	D.S	76.06	76.06	76.06	76.07	76.07	76.07	76.07	76.06	76.06	76.05	76.05	76.05	
	Discharge	0.247	0.247	0.247	0.248	0.248	0.248	0.247	0.247	0.245	0.245	0.245	0.245	
11/24/00	U.S	76.52	76.52	76.52	76.52	76.52	76.52	76.54	76.53	76.53	76.53	76.53	76.52	2.945
	D.S	76.05	76.05	76.05	76.05	76.05	76.05	76.05	76.05	76.05	76.05	76.05	76.06	
	Discharge	0.245	0.245	0.245	0.245	0.245	0.245	0.245	0.245	0.245	0.245	0.245	0.247	
11/25/00	U.S	76.52	76.53	76.53	76.53	76.53	76.53	76.54	76.53	76.52	76.51	76.52	76.53	2.955
	D.S	76.06	76.06	76.07	76.08	76.07	76.07	76.06	76.05	76.04	76.04	76.05	76.06	
	Discharge	0.247	0.247	0.248	0.250	0.248	0.247	0.245	0.244	0.244	0.244	0.245	0.247	
11/26/00	U.S	76.54	76.56	76.57	76.58	76.58	76.56	76.53	76.52	76.51	76.50	76.49	76.48	2.994
	D.S	76.07	76.08	76.09	76.10	76.10	76.09	76.09	76.08	76.07	76.07	76.06	76.04	
	Discharge	0.248	0.250	0.252	0.253	0.253	0.252	0.252	0.250	0.248	0.247	0.245	0.244	
11/27/00	U.S	76.46	76.45	76.45	76.45	76.48	76.48	76.51	76.51	76.51	76.51	76.51	76.51	2.758
	D.S	76.03	76.03	76.02	76.01	75.99	75.01	76.02	76.01	76.01	76.01	76.01	76.02	
	Discharge	0.242	0.242	0.240	0.239	0.236	0.123	0.240	0.239	0.239	0.239	0.239	0.240	
11/28/00	U.S	76.53	76.56	76.56	76.57	76.55	76.54	76.53	76.51	76.52	76.51	76.50	76.35	2.929
	D.S	76.03	76.05	76.05	76.06	76.08	76.07	76.06	76.06	76.06	76.02	76.01	75.99	
	Discharge	0.242	0.245	0.245	0.247	0.250	0.248	0.247	0.247	0.244	0.240	0.239	0.236	
11/29/00	U.S	76.30	76.30	76.39	76.39	76.39	76.51	76.43	76.42	76.42	76.42	76.40	76.42	2.668
	D.S	75.97	75.96	75.84	75.80	75.80	75.80	75.92	75.93	75.95	75.95	75.94	75.94	
	Discharge	0.233	0.231	0.213	0.208	0.208	0.208	0.225	0.227	0.230	0.230	0.228	0.228	
11/30/00	U.S	76.42	76.42	76.49	76.43	76.48	76.62	76.62	76.62	76.62	76.62	76.62	76.62	2.612
	D.S	75.93	75.93	75.93	75.78	75.80	75.80	75.81	75.83	75.85	75.90	75.93	75.93	
	Discharge	0.227	0.227	0.227	0.205	0.208	0.208	0.209	0.212	0.215	0.222	0.227	0.227	
12/01/00	U.S	76.50	76.45	76.42	76.37	76.39	76.40	76.41	76.43	76.46	76.55	76.55	76.56	2.530
	D.S	75.85	75.85	75.85	75.85	75.85	75.81	75.78	75.79	75.80	75.80	75.81	75.81	
	Discharge	0.215	0.215	0.215	0.215	0.215	0.209	0.205	0.207	0.208	0.208	0.209	0.209	
12/02/00	U.S	76.56	76.56	76.56	76.56	76.56	76.56	76.56	76.56	76.56	76.56	76.56	76.56	2.528
	D.S	75.82	75.82	75.82	75.82	75.82	75.82	75.82	75.82	75.82	75.82	75.82	75.82	
	Discharge	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	
12/03/00	U.S	76.45	76.49	76.51	76.54	76.48	76.42	76.37	76.38	76.35	76.36	76.37	76.36	2.684
	D.S	75.86	75.90	75.94	75.94	75.94	75.94	75.94	75.94	75.95	75.88	75.85	75.84	
	Discharge	0.216	0.222	0.228	0.228	0.228	0.228	0.228	0.230	0.219	0.215	0.213	0.213	

Table 9-3. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	Total
12/04/00	U.S	76.37	76.36	76.36	76.35	76.35	76.36	76.36	76.36	76.36	76.36	76.36	76.36	2.625
	D.S	75.84	75.83	75.83	75.85	75.87	75.90	75.90	75.90	75.90	75.90	75.90	75.90	
	Discharge	0.213	0.212	0.212	0.215	0.218	0.222	0.222	0.222	0.222	0.222	0.222	0.222	
12/05/00	U.S	76.31	76.31	76.31	76.31	76.31	76.31	76.32	76.31	76.29	76.28	76.27	76.27	2.619
	D.S	75.88	75.88	75.88	75.88	75.88	75.88	75.87	75.87	75.86	75.87	75.87	75.86	
	Discharge	0.219	0.219	0.219	0.219	0.219	0.219	0.218	0.218	0.216	0.218	0.218	0.216	
12/06/00	U.S	76.26	76.25	76.25	76.25	76.24	76.28	76.28	76.31	76.31	76.33	76.37	76.38	2.528
	D.S	75.82	75.82	75.82	75.82	75.82	75.82	75.82	75.82	75.82	75.82	75.82	75.82	
	Discharge	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	
12/07/00	U.S	76.42	76.43	76.43	76.44	76.42	76.39	76.36	76.35	76.33	76.35	76.36	76.36	2.528
	D.S	75.82	75.82	75.82	75.82	75.82	75.82	75.82	75.82	75.82	75.82	75.82	75.82	
	Discharge	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	
12/08/00	U.S	76.35	76.35	76.34	76.34	76.38	76.38	76.38	76.42	76.42	76.42	76.42	76.42	2.495
	D.S	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	
	Discharge	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	
12/09/00	U.S	76.41	76.41	76.43	76.43	76.41	76.42	76.45	76.44	76.46	76.47	76.47	76.45	2.495
	D.S	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	
	Discharge	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	
12/10/00	U.S	76.45	76.45	76.44	76.44	76.38	76.35	76.30	76.32	76.34	76.29	76.29	76.29	2.579
	D.S	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	
	Discharge	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	
12/11/00	U.S	76.29	76.29	76.29	76.29	76.29	76.29	76.29	76.29	76.29	76.29	76.29	76.29	2.701
	D.S	75.92	75.92	75.92	75.92	75.92	75.92	75.92	75.92	75.92	75.92	75.92	75.92	
	Discharge	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	
12/12/00	U.S	76.29	76.29	76.29	76.29	76.29	76.29	76.29	76.29	76.29	76.29	76.29	76.29	2.701
	D.S	75.92	75.92	75.92	75.92	75.92	75.92	75.92	75.92	75.92	75.92	75.92	75.92	
	Discharge	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	
12/13/00	U.S	76.29	76.29	76.29	76.29	76.29	76.29	76.29	76.29	76.29	76.29	76.29	76.29	2.701
	D.S	75.92	75.92	75.92	75.92	75.92	75.92	75.92	75.92	75.92	75.92	75.92	75.92	
	Discharge	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	
12/14/00	U.S	76.29	76.29	76.29	76.29	76.29	76.29	76.29	76.29	76.29	76.29	76.29	76.29	2.701
	D.S	75.92	75.92	75.92	75.92	75.92	75.92	75.92	75.92	75.92	75.92	75.92	75.92	
	Discharge	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	
12/15/00	U.S	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	76.15	2.336
	D.S	75.70	75.70	75.70	75.70	75.70	75.70	75.70	75.70	75.70	75.70	75.70	75.70	
	Discharge	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195	0.195	
12/16/00	U.S	75.65	75.65	75.65	75.65	75.65	75.65	75.65	75.65	75.65	75.65	75.65	75.65	2.186
	D.S	75.60	75.60	75.60	75.60	75.60	75.60	75.60	75.60	75.60	75.60	75.60	75.60	
	Discharge	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	
12/17/00	U.S	75.65	75.65	75.65	75.65	75.65	75.65	75.65	75.65	75.65	75.65	75.65	75.65	2.186
	D.S	75.60	75.60	75.60	75.60	75.60	75.60	75.60	75.60	75.60	75.60	75.60	75.60	
	Discharge	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	
12/18/00	U.S	75.45	75.45	75.45	75.45	75.45	75.45	75.45	75.45	75.45	75.45	75.45	75.45	1.915
	D.S	75.40	75.40	75.40	75.40	75.40	75.40	75.40	75.40	75.40	75.40	75.40	75.40	
	Discharge	0.160	0.160	0.160	0.160	0.160	0.160	0.160	0.160	0.160	0.160	0.160	0.160	
12/19/00	U.S	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	2.579
	D.S	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	
	Discharge	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	
12/20/00	U.S	76.30	76.30	76.30	76.30	76.30	76.30	76.30	76.30	76.30	76.30	76.30	76.30	2.665
	D.S	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	
	Discharge	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	
12/21/00	U.S	76.40	76.40	76.40	76.40	76.40	76.40	76.40	76.40	76.40	76.40	76.40	76.40	2.665
	D.S	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	
	Discharge	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	

Table 9-3. (Continued).

Table 9-3. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	Total
01/08/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	1.901
	D.S	75.33	75.34	75.35	75.36	75.41	75.41	75.41	75.41	75.41	75.41	75.41	75.41	
	Discharge	0.152	0.153	0.154	0.155	0.161	0.161	0.161	0.161	0.161	0.161	0.161	0.161	
01/09/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	1.812
	D.S	75.27	75.27	75.27	75.27	75.27	75.27	75.27	75.28	75.33	75.41	75.43	75.44	
	Discharge	0.146	0.146	0.146	0.146	0.146	0.146	0.146	0.147	0.152	0.161	0.163	0.164	
01/10/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	1.872
	D.S	75.46	75.46	75.45	75.45	75.31	75.28	75.27	75.31	75.33	75.36	75.35	75.34	
	Discharge	0.166	0.166	0.165	0.165	0.150	0.147	0.146	0.150	0.152	0.155	0.154	0.153	
01/11/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	1.870
	D.S	75.33	75.35	75.36	75.37	75.40	75.38	75.37	75.37	75.36	75.36	75.36	75.36	
	Discharge	0.152	0.154	0.155	0.156	0.160	0.157	0.156	0.156	0.155	0.155	0.155	0.155	
01/12/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	1.876
	D.S	75.37	75.37	75.38	75.39	75.38	75.36	75.34	75.34	75.37	75.36	75.38	75.39	
	Discharge	0.156	0.156	0.157	0.159	0.157	0.155	0.153	0.153	0.156	0.155	0.157	0.159	
01/13/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	1.888
	D.S	75.39	75.39	75.39	75.39	75.43	75.41	75.37	75.35	75.34	75.34	75.35	75.39	
	Discharge	0.159	0.159	0.159	0.159	0.163	0.161	0.156	0.154	0.153	0.153	0.154	0.159	
01/14/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.001
	D.S	75.42	75.44	75.47	75.50	75.57	75.53	75.50	75.47	75.44	75.42	75.41	75.41	
	Discharge	0.162	0.164	0.167	0.171	0.179	0.174	0.171	0.167	0.164	0.162	0.161	0.161	
01/15/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.460
	D.S	75.40	75.40	75.40	75.39	75.33	75.36	76.08	76.11	76.11	76.10	76.09	76.08	
	Discharge	0.160	0.160	0.160	0.159	0.152	0.155	0.250	0.255	0.255	0.253	0.252	0.250	
01/16/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.847
	D.S	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	
	Discharge	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
01/17/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.754
	D.S	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	
	Discharge	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	
01/18/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.847
	D.S	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	
	Discharge	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
01/19/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.579
	D.S	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	
	Discharge	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	
01/20/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.754
	D.S	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	
	Discharge	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	
01/21/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.754
	D.S	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	
	Discharge	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	
01/22/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.847
	D.S	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	
	Discharge	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
01/23/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.754
	D.S	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	
	Discharge	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	
01/24/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.754
	D.S	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	
	Discharge	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	
01/25/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.754
	D.S	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	
	Discharge	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	

Table 9-3. (Continued).

Table 9-3. (Continued).

Table 9-3. (Continued).

Day		12Am	2Am	4Am	6Am	8Am	10Am	12Pm	2Pm	4Pm	6Pm	8Pm	10Pm	Total
03/02/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.847
	D.S	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	
	Discharge	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
03/03/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.528
	D.S	75.82	75.82	75.82	75.82	75.82	75.82	75.82	75.82	75.82	75.82	75.82	75.82	
	Discharge	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	0.211	
03/04/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.847
	D.S	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	
	Discharge	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
03/05/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.665
	D.S	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	
	Discharge	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	
03/06/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.665
	D.S	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	
	Discharge	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	
03/07/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.665
	D.S	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	
	Discharge	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	
03/08/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.665
	D.S	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	
	Discharge	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	
03/09/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.754
	D.S	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	75.95	
	Discharge	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	0.230	
03/10/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.495
	D.S	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	75.80	
	Discharge	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	0.208	
03/11/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.665
	D.S	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	75.90	
	Discharge	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	0.222	
03/12/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.579
	D.S	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	
	Discharge	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	
03/13/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.579
	D.S	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	75.85	
	Discharge	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	0.215	
03/14/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.781
	D.S	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	76.00	
	Discharge	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	0.237	
03/15/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.50	2.658
	D.S	75.92	75.92	75.92	75.92	75.92	75.92	75.92	75.92	75.92	75.92	75.92	75.92	
	Discharge	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	0.225	
03/16/01	U.S	76.55	76.57	76.59	76.60	76.53	76.51	76.48	76.50	76.50	76.50	76.50	76.51	2.727
	D.S	75.89	75.90	75.91	75.92	76.00	76.01	76.00	75.89	75.91	75.92	75.93	75.92	
	Discharge	0.221	0.222	0.224	0.225	0.237	0.239	0.237	0.231	0.228	0.222	0.221	0.221	
03/17/01	U.S	76.50	76.50	76.50	76.50	76.50	76.50	76.50	76.52	76.52	76.52	76.52	76.52	2.685
	D.S	75.88	75.89	75.89	75.89	75.89	75.90	75.91	75.91	75.93	75.94	75.95	75.95	
	Discharge	0.219	0.221	0.221	0.221	0.221	0.222	0.224	0.224	0.227	0.228	0.230	0.230	
03/18/01	U.S	76.52	76.53	76.53	76.54	76.52	76.51	76.48	76.48	76.47	76.48	76.48	76.47	2.759
	D.S	75.96	75.97	75.97	75.98	75.99	75.98	75.95	75.95	75.94	75.92	75.91	75.91	
	Discharge	0.231	0.233	0.233	0.234	0.236	0.234	0.230	0.230	0.228	0.225	0.224	0.224	
03/19/01	U.S	76.48	76.48	76.48	76.49	76.50	76.50	76.49	76.47	76.46	76.46	76.47	76.48	2.702
	D.S	75.91	75.91	75.94	75.94	75.96	75.95	75.94	75.92	75.91	75.89	75.89	75.89	
	Discharge	0.224	0.224	0.228	0.228	0.231	0.230	0.228	0.225	0.224	0.221	0.221	0.221	

Table 9-3. (Continued).

Table 9-4. Working hours and discharges of Elmaalla P.S.

Date	Working Hours	Pump Unit discharge (m ³ /s)	Effeciency	Total Discharge (M.m3/day)
01/03/2000	30	2.7	0.8	0.233
02/03/2000	30	2.7	0.8	0.233
03/03/2000	31	2.7	0.8	0.241
04/03/2000	29	2.7	0.8	0.226
05/03/2000	28	2.7	0.8	0.218
06/03/2000	40	2.7	0.8	0.311
07/03/2000	40	2.7	0.8	0.311
08/03/2000	28	2.7	0.8	0.218
09/03/2000	23	2.7	0.8	0.179
10/03/2000	24	2.7	0.8	0.187
11/03/2000	24	2.7	0.8	0.187
12/03/2000	24	2.7	0.8	0.187
13/03/2000	30	2.7	0.8	0.233
14/03/2000	34	2.7	0.8	0.264
15/03/2000	18	2.7	0.8	0.140
16/03/2000	0	2.7	0.8	0.000
17/03/2000	35	2.7	0.8	0.272
18/03/2000	36	2.7	0.8	0.280
19/03/2000	24	2.7	0.8	0.187
20/03/2000	24	2.7	0.8	0.187
21/03/2000	28	2.7	0.8	0.218
22/03/2000	26	2.7	0.8	0.202
23/03/2000	24	2.7	0.8	0.187
24/03/2000	42	2.7	0.8	0.327
25/03/2000	28	2.7	0.8	0.218
26/03/2000	29	2.7	0.8	0.226
27/03/2000	24	2.7	0.8	0.187
28/03/2000	27	2.7	0.8	0.210
29/03/2000	42	2.7	0.8	0.327
30/03/2000	36	2.7	0.8	0.280
31/03/2000	36	2.7	0.8	0.280
01/04/2000	34	2.7	0.8	0.264
02/04/2000	0	2.7	0.8	0.000
03/04/2000	48	2.7	0.8	0.373
04/04/2000	42	2.7	0.8	0.327
05/04/2000	44	2.7	0.8	0.342
06/04/2000	42	2.7	0.8	0.327
07/04/2000	44	2.7	0.8	0.342
08/04/2000	32	2.7	0.8	0.249
09/04/2000	44	2.7	0.8	0.342
10/04/2000	37	2.7	0.8	0.288
11/04/2000	43	2.7	0.8	0.334
12/04/2000	30	2.7	0.8	0.233
13/04/2000	39	2.7	0.8	0.303
14/04/2000	48	2.7	0.8	0.373
15/04/2000	46	2.7	0.8	0.358
16/04/2000	31	2.7	0.8	0.241
17/04/2000	41	2.7	0.8	0.319
18/04/2000	40	2.7	0.8	0.311
19/04/2000	44	2.7	0.8	0.342
20/04/2000	40	2.7	0.8	0.311
21/04/2000	40	2.7	0.8	0.311

Table 9-4. (Continued).

Date	No of Hours	Dis. (m ³ /sec)	Eff.	Total Dis.(Mm ³ /day)
22/04/2000	36	2.7	0.8	0.280
23/04/2000	23	2.7	0.8	0.179
24/04/2000	30	2.7	0.8	0.233
25/04/2000	40	2.7	0.8	0.311
26/04/2000	45	2.7	0.8	0.350
27/04/2000	24	2.7	0.8	0.187
28/04/2000	24	2.7	0.8	0.187
29/04/2000	24	2.7	0.8	0.187
30/04/2000	24	2.7	0.8	0.187
01/05/2000	44	2.7	0.8	0.342
02/05/2000	36	2.7	0.8	0.280
03/05/2000	32	2.7	0.8	0.249
04/05/2000	36	2.7	0.8	0.280
05/05/2000	44	2.7	0.8	0.342
06/05/2000	39	2.7	0.8	0.303
07/05/2000	30	2.7	0.8	0.233
08/05/2000	34	2.7	0.8	0.264
09/05/2000	30	2.7	0.8	0.233
10/05/2000	33	2.7	0.8	0.257
11/05/2000	24	2.7	0.8	0.187
12/05/2000	24	2.7	0.8	0.187
13/05/2000	24	2.7	0.8	0.187
14/05/2000	31	2.7	0.8	0.241
15/05/2000	40	2.7	0.8	0.311
16/05/2000	39	2.7	0.8	0.303
17/05/2000	37	2.7	0.8	0.288
18/05/2000	38	2.7	0.8	0.295
19/05/2000	46	2.7	0.8	0.358
20/05/2000	36	2.7	0.8	0.280
21/05/2000	39	2.7	0.8	0.303
22/05/2000	44	2.7	0.8	0.342
23/05/2000	33	2.7	0.8	0.257
24/05/2000	30	2.7	0.8	0.233
25/05/2000	42	2.7	0.8	0.327
26/05/2000	46	2.7	0.8	0.358
27/05/2000	44	2.7	0.8	0.342
28/05/2000	48	2.7	0.8	0.373
29/05/2000	44	2.7	0.8	0.342
30/05/2000	24	2.7	0.8	0.187
31/05/2000	44	2.7	0.8	0.342
01/06/2000	48	2.7	0.8	0.373
02/06/2000	48	2.7	0.8	0.373
03/06/2000	46	2.7	0.8	0.358
04/06/2000	42	2.7	0.8	0.327
05/06/2000	45	2.7	0.8	0.350
06/06/2000	48	2.7	0.8	0.373
07/06/2000	48	2.7	0.8	0.373
08/06/2000	38	2.7	0.8	0.295
09/06/2000	44	2.7	0.8	0.342
10/06/2000	44	2.7	0.8	0.342
11/06/2000	44	2.7	0.8	0.342
12/06/2000	39	2.7	0.8	0.303

Table 9-4. (Continued).

Date	No of Hours	Dis. (m ³ /sec)	Eff.	Total Dis.(Mm ³ /day)
13/06/2000	41	2.7	0.8	0.319
14/06/2000	30	2.7	0.8	0.233
15/06/2000	30	2.7	0.8	0.233
16/06/2000	44	2.7	0.8	0.342
17/06/2000	44	2.7	0.8	0.342
18/06/2000	40	2.7	0.8	0.311
19/06/2000	36	2.7	0.8	0.280
20/06/2000	28	2.7	0.8	0.218
21/06/2000	44	2.7	0.8	0.342
22/06/2000	44	2.7	0.8	0.342
23/06/2000	40	2.7	0.8	0.311
24/06/2000	44	2.7	0.8	0.342
25/06/2000	44	2.7	0.8	0.342
26/06/2000	45	2.7	0.8	0.350
27/06/2000	41	2.7	0.8	0.319
28/06/2000	48	2.7	0.8	0.373
29/06/2000	44	2.7	0.8	0.342
30/06/2000	44	2.7	0.8	0.342
01/07/2000	44	2.7	0.8	0.342
02/07/2000	44	2.7	0.8	0.342
03/07/2000	42	2.7	0.8	0.327
04/07/2000	35	2.7	0.8	0.272
05/07/2000	42	2.7	0.8	0.327
06/07/2000	43	2.7	0.8	0.334
07/07/2000	44	2.7	0.8	0.342
08/07/2000	44	2.7	0.8	0.342
09/07/2000	38	2.7	0.8	0.295
10/07/2000	36	2.7	0.8	0.280
11/07/2000	45	2.7	0.8	0.350
12/07/2000	48	2.7	0.8	0.373
13/07/2000	48	2.7	0.8	0.373
14/07/2000	44	2.7	0.8	0.342
15/07/2000	46	2.7	0.8	0.358
16/07/2000	48	2.7	0.8	0.373
17/07/2000	42	2.7	0.8	0.327
18/07/2000	46	2.7	0.8	0.358
19/07/2000	44	2.7	0.8	0.342
20/07/2000	44	2.7	0.8	0.342
21/07/2000	44	2.7	0.8	0.342
22/07/2000	46	2.7	0.8	0.358
23/07/2000	48	2.7	0.8	0.373
24/07/2000	48	2.7	0.8	0.373
25/07/2000	46	2.7	0.8	0.358
26/07/2000	46	2.7	0.8	0.358
27/07/2000	44	2.7	0.8	0.342
28/07/2000	48	2.7	0.8	0.373
29/07/2000	48	2.7	0.8	0.373
30/07/2000	48	2.7	0.8	0.373
31/07/2000	44	2.7	0.8	0.342
01/08/2000	48	2.7	0.8	0.373
02/08/2000	48	2.7	0.8	0.373
03/08/2000	46	2.7	0.8	0.358

Table 9-4. (Continued).

Date	No of Hours	Dis. (m ³ /sec)	Eff.	Total Dis.(Mm ³ /day)
04/08/2000	48	2.7	0.8	0.373
05/08/2000	48	2.7	0.8	0.373
06/08/2000	48	2.7	0.8	0.373
07/08/2000	48	2.7	0.8	0.373
08/08/2000	48	2.7	0.8	0.373
09/08/2000	48	2.7	0.8	0.373
10/08/2000	48	2.7	0.8	0.373
11/08/2000	48	2.7	0.8	0.373
12/08/2000	48	2.7	0.8	0.373
13/08/2000	44	2.7	0.8	0.342
14/08/2000	48	2.7	0.8	0.373
15/08/2000	48	2.7	0.8	0.373
16/08/2000	48	2.7	0.8	0.373
17/08/2000	42	2.7	0.8	0.327
18/08/2000	48	2.7	0.8	0.373
19/08/2000	52	2.7	0.8	0.404
20/08/2000	50	2.7	0.8	0.389
21/08/2000	52	2.7	0.8	0.404
22/08/2000	51	2.7	0.8	0.397
23/08/2000	46	2.7	0.8	0.358
24/08/2000	45	2.7	0.8	0.350
25/08/2000	48	2.7	0.8	0.373
26/08/2000	57	2.7	0.8	0.443
27/08/2000	48	2.7	0.8	0.373
28/08/2000	48	2.7	0.8	0.373
29/08/2000	56	2.7	0.8	0.435
30/08/2000	47	2.7	0.8	0.365
31/08/2000	51	2.7	0.8	0.397
01/09/2000	50	2.7	0.8	0.389
02/09/2000	48	2.7	0.8	0.373
03/09/2000	44	2.7	0.8	0.342
04/09/2000	45	2.7	0.8	0.350
05/09/2000	46	2.7	0.8	0.358
06/09/2000	40	2.7	0.8	0.311
07/09/2000	44	2.7	0.8	0.342
08/09/2000	46	2.7	0.8	0.358
09/09/2000	48	2.7	0.8	0.373
10/09/2000	44	2.7	0.8	0.342
11/09/2000	52	2.7	0.8	0.404
12/09/2000	49	2.7	0.8	0.381
13/09/2000	46	2.7	0.8	0.358
14/09/2000	48	2.7	0.8	0.373
15/09/2000	50	2.7	0.8	0.389
16/09/2000	46	2.7	0.8	0.358
17/09/2000	44	2.7	0.8	0.342
18/09/2000	48	2.7	0.8	0.373
19/09/2000	48	2.7	0.8	0.373
20/09/2000	48	2.7	0.8	0.373
21/09/2000	48	2.7	0.8	0.373
22/09/2000	44	2.7	0.8	0.342
23/09/2000	40	2.7	0.8	0.311
24/09/2000	51	2.7	0.8	0.397

Table 9-4. (Continued).

Date	No of Hours	Dis. (m ³ /sec)	Eff.	Total Dis.(Mm ³ /day)
25/09/2000	48	2.7	0.8	0.373
26/09/2000	48	2.7	0.8	0.373
27/09/2000	48	2.7	0.8	0.373
28/09/2000	39	2.7	0.8	0.303
29/09/2000	48	2.7	0.8	0.373
30/09/2000	39	2.7	0.8	0.303
01/10/2000	36	2.7	0.8	0.280
02/10/2000	39	2.7	0.8	0.303
03/10/2000	44	2.7	0.8	0.342
04/10/2000	39	2.7	0.8	0.303
05/10/2000	34	2.7	0.8	0.264
06/10/2000	42	2.7	0.8	0.327
07/10/2000	39	2.7	0.8	0.303
08/10/2000	48	2.7	0.8	0.373
09/10/2000	44	2.7	0.8	0.342
10/10/2000	28	2.7	0.8	0.218
11/10/2000	24	2.7	0.8	0.187
12/10/2000	24	2.7	0.8	0.187
13/10/2000	24	2.7	0.8	0.187
14/10/2000	24	2.7	0.8	0.187
15/10/2000	24	2.7	0.8	0.187
16/10/2000	43	2.7	0.8	0.334
17/10/2000	24	2.7	0.8	0.187
18/10/2000	32	2.7	0.8	0.249
19/10/2000	48	2.7	0.8	0.373
20/10/2000	48	2.7	0.8	0.373
21/10/2000	34	2.7	0.8	0.264
22/10/2000	48	2.7	0.8	0.373
23/10/2000	48	2.7	0.8	0.373
24/10/2000	24	2.7	0.8	0.187
25/10/2000	32	2.7	0.8	0.249
26/10/2000	24	2.7	0.8	0.187
27/10/2000	24	2.7	0.8	0.187
28/10/2000	38	2.7	0.8	0.295
29/10/2000	27	2.7	0.8	0.210
30/10/2000	48	2.7	0.8	0.373
31/10/2000	42	2.7	0.8	0.327
01/11/2000	39	2.7	0.8	0.303
02/11/2000	30	2.7	0.8	0.233
03/11/2000	42	2.7	0.8	0.327
04/11/2000	36	2.7	0.8	0.280
05/11/2000	38	2.7	0.8	0.295
06/11/2000	34	2.7	0.8	0.264
07/11/2000	34	2.7	0.8	0.264
08/11/2000	28	2.7	0.8	0.218
09/11/2000	34	2.7	0.8	0.264
10/11/2000	30	2.7	0.8	0.233
11/11/2000	39	2.7	0.8	0.303
12/11/2000	40	2.7	0.8	0.311
13/11/2000	48	2.7	0.8	0.373
14/11/2000	40	2.7	0.8	0.311
15/11/2000	34	2.7	0.8	0.264

Table 9-4. (Continued).

Date	No of Hours	Dis. (m ³ /sec)	Eff.	Total Dis.(Mm ³ /day)
16/11/2000	42	2.7	0.8	0.327
17/11/2000	48	2.7	0.8	0.373
18/11/2000	34	2.7	0.8	0.264
19/11/2000	39	2.7	0.8	0.303
20/11/2000	48	2.7	0.8	0.373
21/11/2000	32	2.7	0.8	0.249
22/11/2000	29	2.7	0.8	0.226
23/11/2000	24	2.7	0.8	0.187
24/11/2000	24	2.7	0.8	0.187
25/11/2000	24	2.7	0.8	0.187
26/11/2000	24	2.7	0.8	0.187
27/11/2000	36	2.7	0.8	0.280
28/11/2000	31	2.7	0.8	0.241
29/11/2000	48	2.7	0.8	0.373
30/11/2000	39	2.7	0.8	0.303
01/12/2000	30	2.7	0.8	0.233
02/12/2000	24	2.7	0.8	0.187
03/12/2000	24	2.7	0.8	0.187
04/12/2000	36	2.7	0.8	0.280
05/12/2000	48	2.7	0.8	0.373
06/12/2000	48	2.7	0.8	0.373
07/12/2000	42	2.7	0.8	0.327
08/12/2000	24	2.7	0.8	0.187
09/12/2000	30	2.7	0.8	0.233
10/12/2000	48	2.7	0.8	0.373
11/12/2000	14	2.7	0.8	0.109
12/12/2000	0	2.7	0.8	0.000
13/12/2000	0	2.7	0.8	0.000
14/12/2000	0	2.7	0.8	0.000
15/12/2000	0	2.7	0.8	0.000
16/12/2000	0	2.7	0.8	0.000
17/12/2000	0	2.7	0.8	0.000
18/12/2000	0	2.7	0.8	0.000
19/12/2000	0	2.7	0.8	0.000
20/12/2000	0	2.7	0.8	0.000
21/12/2000	0	2.7	0.8	0.000
22/12/2000	0	2.7	0.8	0.000
23/12/2000	0	2.7	0.8	0.000
24/12/2000	0	2.7	0.8	0.000
25/12/2000	0	2.7	0.8	0.000
26/12/2000	13	2.7	0.8	0.101
27/12/2000	9	2.7	0.8	0.070
28/12/2000	30	2.7	0.8	0.233
29/12/2000	48	2.7	0.8	0.373
30/12/2000	48	2.7	0.8	0.373
31/12/2000	48	2.7	0.8	0.373
01/01/2001	38	2.7	0.8	0.295
02/01/2001	38	2.7	0.8	0.295
03/01/2001	48	2.7	0.8	0.373
04/01/2001	48	2.7	0.8	0.373
05/01/2001	48	2.7	0.8	0.373
06/01/2001	48	2.7	0.8	0.373
07/01/2001	40	2.7	0.8	0.311
08/01/2001	17	2.7	0.8	0.132
09/01/2001	26	2.7	0.8	0.202

Table 9-4. (Continued).

Date	Working Hours	Pump Unit discharge (m^3/s)	Effeciency	Total Discharge (M. m^3/day)
10/01/2001	36	2.7	0.8	0.280
11/01/2001	22	2.7	0.8	0.171
12/01/2001	15	2.7	0.8	0.117
13/01/2001	24	2.7	0.8	0.187
14/01/2001	12	2.7	0.8	0.093
15/01/2001	44	2.7	0.8	0.342
16/01/2001	25	2.7	0.8	0.194
17/01/2001	24	2.7	0.8	0.187
18/01/2001	15	2.7	0.8	0.117
19/01/2001	24	2.7	0.8	0.187
20/01/2001	17	2.7	0.8	0.132
21/01/2001	24	2.7	0.8	0.187
22/01/2001	30	2.7	0.8	0.233
23/01/2001	17	2.7	0.8	0.132
24/01/2001	19	2.7	0.8	0.148
25/01/2001	15	2.7	0.8	0.117
26/01/2001	15	2.7	0.8	0.117
27/01/2001	29	2.7	0.8	0.226
28/01/2001	24	2.7	0.8	0.187
29/01/2001	20	2.7	0.8	0.156
30/01/2001	24	2.7	0.8	0.187
31/01/2001	24	2.7	0.8	0.187
01/02/2001	24	2.7	0.8	0.187
02/02/2001	21	2.7	0.8	0.163
03/02/2001	22	2.7	0.8	0.171
04/02/2001	22	2.7	0.8	0.171
05/02/2001	22	2.7	0.8	0.171
06/02/2001	24	2.7	0.8	0.187
07/02/2001	24	2.7	0.8	0.187
08/02/2001	24	2.7	0.8	0.187
09/02/2001	21	2.7	0.8	0.163
10/02/2001	24	2.7	0.8	0.187
11/02/2001	24	2.7	0.8	0.187
12/02/2001	38	2.7	0.8	0.295
13/02/2001	24	2.7	0.8	0.187
14/02/2001	24	2.7	0.8	0.187
15/02/2001	30	2.7	0.8	0.233
16/02/2001	34	2.7	0.8	0.264
17/02/2001	12	2.7	0.8	0.093
18/02/2001	24	2.7	0.8	0.187
19/02/2001	35	2.7	0.8	0.272
20/02/2001	24	2.7	0.8	0.187
21/02/2001	21	2.7	0.8	0.163
22/02/2001	24	2.7	0.8	0.187
23/02/2001	44	2.7	0.8	0.342
24/02/2001	24	2.7	0.8	0.187
25/02/2001	24	2.7	0.8	0.187
26/02/2001	24	2.7	0.8	0.187
27/02/2001	32	2.7	0.8	0.249
28/02/2001	24	2.7	0.8	0.187
01/03/2001	25	2.7	0.8	0.194
02/03/2001	24	2.7	0.8	0.187

Table 9-4. (Continued).

Date	Working Hours	Pump Unit discharge (m ³ /s)	Effeciency	Total Discharge (M.m ³ /day)
03/03/2001	29	2.7	0.8	0.226
04/03/2001	0	2.7	0.8	0.000
05/03/2001	0	2.7	0.8	0.000
06/03/2001	0	2.7	0.8	0.000
07/03/2001	0	2.7	0.8	0.000
08/03/2001	24	2.7	0.8	0.187
09/03/2001	35	2.7	0.8	0.272
10/03/2001	24	2.7	0.8	0.187
11/03/2001	24	2.7	0.8	0.187
12/03/2001	33	2.7	0.8	0.257
13/03/2001	30	2.7	0.8	0.233
14/03/2001	30	2.7	0.8	0.233
15/03/2001	24	2.7	0.8	0.187
16/03/2001	24	2.7	0.8	0.187
17/03/2001	24	2.7	0.8	0.187
18/03/2001	24	2.7	0.8	0.187
19/03/2001	24	2.7	0.8	0.187
20/03/2001	24	2.7	0.8	0.187
21/03/2001	37	2.7	0.8	0.288
22/03/2001	28	2.7	0.8	0.218
23/03/2001	33	2.7	0.8	0.257
24/03/2001	28	2.7	0.8	0.218
25/03/2001	33	2.7	0.8	0.257
26/03/2001	24	2.7	0.8	0.187
27/03/2001	41	2.7	0.8	0.319
28/03/2001	42	2.7	0.8	0.327
29/03/2001	39	2.7	0.8	0.303
30/03/2001	45	2.7	0.8	0.350
31/03/2001	41	2.7	0.8	0.319
01/04/2001	42	2.7	0.8	0.327
02/04/2001	42	2.7	0.8	0.327
03/04/2001	40	2.7	0.8	0.311
04/04/2001	36	2.7	0.8	0.280
05/04/2001	44	2.7	0.8	0.342
06/04/2001	44	2.7	0.8	0.342
07/04/2001	28	2.7	0.8	0.218
08/04/2001	32	2.7	0.8	0.249
09/04/2001	28	2.7	0.8	0.218
10/04/2001	37	2.7	0.8	0.288
11/04/2001	27	2.7	0.8	0.210
12/04/2001	34	2.7	0.8	0.264
13/04/2001	36	2.7	0.8	0.280
14/04/2001	31	2.7	0.8	0.241
15/04/2001	38	2.7	0.8	0.295
16/04/2001	39	2.7	0.8	0.303
17/04/2001	40	2.7	0.8	0.311
18/04/2001	0	2.7	0.8	0.000
19/04/2001	24	2.7	0.8	0.187
20/04/2001	0	2.7	0.8	0.000
21/04/2001	0	2.7	0.8	0.000
22/04/2001	25	2.7	0.8	0.194
23/04/2001	29	2.7	0.8	0.226
24/04/2001	34	2.7	0.8	0.264

Table 9-4. (Continued).

Date	Working Hours	Pump Unit discharge (m ³ /s)	Effeciency	Total Discharge (M.m ³ /day)
25/04/2001	24	2.7	0.8	0.187
26/04/2001	35	2.7	0.8	0.272
27/04/2001	24	2.7	0.8	0.187
28/04/2001	40	2.7	0.8	0.311
29/04/2001	32	2.7	0.8	0.249
30/04/2001	28	2.7	0.8	0.218
01/05/2001	40	2.7	0.8	0.311
02/05/2001	29	2.7	0.8	0.226
03/05/2001	23	2.7	0.8	0.179
04/05/2001	36	2.7	0.8	0.280
05/05/2001	24	2.7	0.8	0.187
06/05/2001	25	2.7	0.8	0.194
07/05/2001	36	2.7	0.8	0.280
08/05/2001	32	2.7	0.8	0.249
09/05/2001	34	2.7	0.8	0.264
10/05/2001	32	2.7	0.8	0.249
11/05/2001	24	2.7	0.8	0.187
12/05/2001	41	2.7	0.8	0.319
13/05/2001	39	2.7	0.8	0.303
14/05/2001	43	2.7	0.8	0.334
15/05/2001	48	2.7	0.8	0.373
16/05/2001	46	2.7	0.8	0.358
17/05/2001	40	2.7	0.8	0.311
18/05/2001	33	2.7	0.8	0.257
19/05/2001	45	2.7	0.8	0.350
20/05/2001	36	2.7	0.8	0.280
21/05/2001	40	2.7	0.8	0.311
22/05/2001	37	2.7	0.8	0.288
23/05/2001	53	2.7	0.8	0.412
24/05/2001	53	2.7	0.8	0.412
25/05/2001	49	2.7	0.8	0.381
26/05/2001	47	2.7	0.8	0.365
27/05/2001	58	2.7	0.8	0.451
28/05/2001	48	2.7	0.8	0.373
29/05/2001	47	2.7	0.8	0.365
30/05/2001	48	2.7	0.8	0.373
31/05/2001	54	2.7	0.8	0.420
01/06/2001	48	2.7	0.8	0.373
02/06/2001	52	2.7	0.8	0.404
03/06/2001	48	2.7	0.8	0.373
04/06/2001	48	2.7	0.8	0.373
05/06/2001	48	2.7	0.8	0.373
06/06/2001	48	2.7	0.8	0.373
07/06/2001	48	2.7	0.8	0.373
08/06/2001	48	2.7	0.8	0.373
09/06/2001	46	2.7	0.8	0.358
10/06/2001	48	2.7	0.8	0.373
11/06/2001	48	2.7	0.8	0.373
12/06/2001	35	2.7	0.8	0.272
13/06/2001	38	2.7	0.8	0.295
14/06/2001	41	2.7	0.8	0.319
15/06/2001	45	2.7	0.8	0.350
16/06/2001	45	2.7	0.8	0.350

Table 9-4. (Continued).

Date	Working Hours	Pump Unit discharge (m ³ /s)	Effeciency	Total Discharge (M.m ³ /day)
17/06/2001	37	2.7	0.8	0.288
18/06/2001	42	2.7	0.8	0.327
19/06/2001	46	2.7	0.8	0.358
20/06/2001	44	2.7	0.8	0.342
21/06/2001	46	2.7	0.8	0.358
22/06/2001	42	2.7	0.8	0.327
23/06/2001	48	2.7	0.8	0.373
24/06/2001	48	2.7	0.8	0.373
25/06/2001	40	2.7	0.8	0.311
26/06/2001	48	2.7	0.8	0.373
27/06/2001	44	2.7	0.8	0.342
28/06/2001	40	2.7	0.8	0.311
29/06/2001	58	2.7	0.8	0.451
30/06/2001	48	2.7	0.8	0.373
01/07/2001	43	2.7	0.8	0.334
02/07/2001	53	2.7	0.8	0.412
03/07/2001	47	2.7	0.8	0.365
04/07/2001	52	2.7	0.8	0.404
05/07/2001	50	2.7	0.8	0.389
06/07/2001	48	2.7	0.8	0.373
07/07/2001	48	2.7	0.8	0.373
08/07/2001	41	2.7	0.8	0.319
09/07/2001	43	2.7	0.8	0.334
10/07/2001	48	2.7	0.8	0.373
11/07/2001	48	2.7	0.8	0.373
12/07/2001	48	2.7	0.8	0.373
13/07/2001	48	2.7	0.8	0.373
14/07/2001	48	2.7	0.8	0.373
15/07/2001	24	2.7	0.8	0.187
16/07/2001	54	2.7	0.8	0.420
17/07/2001	53	2.7	0.8	0.412
18/07/2001	51	2.7	0.8	0.397
19/07/2001	49	2.7	0.8	0.381
20/07/2001	48	2.7	0.8	0.373
21/07/2001	48	2.7	0.8	0.373
22/07/2001	47	2.7	0.8	0.365
23/07/2001	48	2.7	0.8	0.373
24/07/2001	48	2.7	0.8	0.373
25/07/2001	48	2.7	0.8	0.373
26/07/2001	48	2.7	0.8	0.373
27/07/2001	48	2.7	0.8	0.373
28/07/2001	50	2.7	0.8	0.389
29/07/2001	39	2.7	0.8	0.303
30/07/2001	44	2.7	0.8	0.342
31/07/2001	53	2.7	0.8	0.412
01/08/2001	48	2.7	0.8	0.373
02/08/2001	52	2.7	0.8	0.404
03/08/2001	48	2.7	0.8	0.373
04/08/2001	48	2.7	0.8	0.373
05/08/2001	48	2.7	0.8	0.373
06/08/2001	48	2.7	0.8	0.373
07/08/2001	51	2.7	0.8	0.397
08/08/2001	51	2.7	0.8	0.397

Table 9-4. (Continued).

Date	Working Hours	Pump Unit discharge (m ³ /s)	Effeciency	Total Discharge (M.m ³ /day)
09/08/2001	48	2.7	0.8	0.373
10/08/2001	48	2.7	0.8	0.373
11/08/2001	50	2.7	0.8	0.389
12/08/2001	48	2.7	0.8	0.373
13/08/2001	50	2.7	0.8	0.389
14/08/2001	51	2.7	0.8	0.397
15/08/2001	51	2.7	0.8	0.397
16/08/2001	50	2.7	0.8	0.389
17/08/2001	50	2.7	0.8	0.389
18/08/2001	48	2.7	0.8	0.373
19/08/2001	47	2.7	0.8	0.365
20/08/2001	43	2.7	0.8	0.334
21/08/2001	48	2.7	0.8	0.373
22/08/2001	54	2.7	0.8	0.420
23/08/2001	44.5	2.7	0.8	0.346
24/08/2001	46	2.7	0.8	0.358
25/08/2001	48	2.7	0.8	0.373
26/08/2001	48	2.7	0.8	0.373
27/08/2001	46	2.7	0.8	0.358
28/08/2001	48	2.7	0.8	0.373
29/08/2001	48	2.7	0.8	0.373
30/08/2001	48	2.7	0.8	0.373
31/08/2001	50	2.7	0.8	0.389
01/09/2001	48	2.7	0.8	0.373
02/09/2001	48	2.7	0.8	0.373
03/09/2001	45	2.7	0.8	0.350
04/09/2001	47	2.7	0.8	0.365
05/09/2001	43	2.7	0.8	0.334
06/09/2001	48	2.7	0.8	0.373
07/09/2001	52	2.7	0.8	0.404
08/09/2001	48	2.7	0.8	0.373
09/09/2001	40	2.7	0.8	0.311
10/09/2001	47	2.7	0.8	0.365
11/09/2001	48	2.7	0.8	0.373
12/09/2001	48	2.7	0.8	0.373
13/09/2001	48	2.7	0.8	0.373
14/09/2001	48	2.7	0.8	0.373
15/09/2001	48	2.7	0.8	0.373
16/09/2001	50	2.7	0.8	0.389
17/09/2001	40	2.7	0.8	0.311
18/09/2001	44	2.7	0.8	0.342
19/09/2001	48	2.7	0.8	0.373
20/09/2001	48	2.7	0.8	0.373
21/09/2001	46	2.7	0.8	0.358
22/09/2001	41	2.7	0.8	0.319
23/09/2001	44	2.7	0.8	0.342
24/09/2001	41	2.7	0.8	0.319
25/09/2001	38	2.7	0.8	0.295
26/09/2001	38	2.7	0.8	0.295
27/09/2001	39	2.7	0.8	0.303
28/09/2001	42	2.7	0.8	0.327
29/09/2001	47	2.7	0.8	0.365
30/09/2001	46	2.7	0.8	0.358